

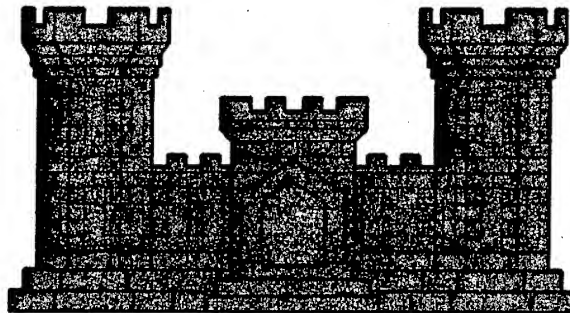
FINAL REPORT

FORT GORDON ENERGY SURVEY & ANALYSIS OF BOILER AND CHILLER PLANTS

BUILDING 25910

BUILDING 25330

COOLING LOADS



PROPOSED ENERGY CONSERVATION OPPORTUNITIES

FOR

SAVANNAH DISTRICT CORPS OF ENGINEERS

CONTRACT NUMBER: DACA21-93-C-0110

VOLUME II

OF 3

3 APRIL 1995

19971016 193



HARRISON AND SPENCER, INC.
ENGINEERS • ARCHITECTS • PLANNERS

438 COTTON AVENUE
P.O. BOX 4246

MACON, GEORGIA
(912) 742-5751

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PRE FINAL REPORT

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438 Cotton Avenue

Macon, Georgia 31208-4246

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APPENDIX I
HEAT LOADS BUILDING 25910

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**          T R A C E   6 0 0   A N A L Y S I S          **
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**          by          **
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ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORPS OF ENGINEERS
BON
BLDG 21604 (SIX BLDGS TOTAL)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 12:10:27 8/19/94
Dataset Name: FGTPS1A .TM

System 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==> Mo/Hr: 8/15 * Mo/Hr: 9/16 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 97/ 76/105.0 * OADB: 93 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	0	41,220		41,220	38.01	*	0	0.00	*	0	-22,454	24.53
Glass Solar	22,296	0		22,296	20.56	*	29,728	55.08	*	0	0	0.00
Glass Cond	9,329	0		9,329	8.60	*	7,655	14.18	*	-23,539	-23,539	25.72
Wall Cond	6,099	1,211		7,310	6.74	*	5,927	10.98	*	-9,699	-12,186	13.32
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	7,954			7,954	7.34	*	3,228	5.98	*	-10,200	-10,200	11.14
Sub Total==>	45,679	42,431		88,110	81.25	*	46,538	86.23	*	-43,437	-68,379	74.71
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	9,426	-9,426		0	0.00	*	7,432	13.77	*	-5,541	0	0.00
Outside Air	0	0	0	25,550	23.56	*	0	0.00	*	0	-26,210	28.64
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Re Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Dis Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		-5,219	0	-5,219	-4.81	*		0.00	*		3,068	-3.35
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	55,105	27,785	0	108,441	100.00	*	53,970	100.00	*	-48,978	-91,521	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	3,320	
Main Clg	9.0	108.4	91.4	3,320	86.0	68.1	75.0	60.3	58.1	69.0	Part	400
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	3,320
Totals	9.0	108.4									Wall	2,043
												464 23

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----					-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	15.8	Type	Clg	Htg			
(Mbh)	(cfm)	Deg F	Deg F	Vent	525	525	Clg Cfm/Sqft	1.00	SADB	60.3	81.3			
Main Htg	-91.5	3,320	56.4	81.3	Infil	163	204	Clg Cfm/Ton	367.39	Plenum	84.0	62.7		
Aux Htg	0.0	0	0.0	0.0	Supply	3,320	3,320	Clg Sqft/Ton	367.39	Return	84.0	62.7		
Preheat	-14.4	3,320	56.4	60.3	Mincfm	0	0	Clg Btuh/Sqft	32.66	Ret/OA	86.0	56.4		
Reheat	0.0	0	0.0	0.0	Return	3,320	3,320	No. People	35	Runarnd	75.0	68.0		
Humidif	0.0	0	0.0	0.0	Exhaust	525	525	Htg % OA	15.8	Fn MtrTD	0.0	0.0		
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0		
Total	-91.5				Auxil	0	0	Htg Btuh/Sqft	-27.57	Fn Frict	0.0	0.0		

System 2 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
 Period at Time ==) Mo/Hr: 8/15 * Mo/Hr: 6/11 * Mo/Hr: 13/ 1
 Outside Air ==) OADB/WB/HR: 97/ 76/105.0 * OADB: 92 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Percent		Space	Percent		Space Peak	Coil Peak	Percent
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	0	31,085		31,085	25.13	*	0	0.00	*	0	-16,771	13.46
Glass Solar	15,015	0		15,015	12.14	*	27,027	53.72	*	0	0	0.00
Glass Cond	5,483	0		5,483	4.43	*	4,049	8.05	*	-13,835	-13,835	11.11
Wall Cond	11,431	1,051		12,483	10.09	*	9,627	19.14	*	-24,613	-28,087	22.55
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	10,948			10,948	8.85	*	4,038	8.03	*	-13,519	-13,519	10.85
Sub Total==>	42,878	32,136		75,015	60.65	*	44,740	88.93	*	-51,967	-72,211	57.97
Internal Loads												
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	7,139	-7,139		0	0.00	*	5,568	11.07	*	-4,497	0	0.00
Outside Air	0	0	0	60,648	49.03	*	0	0.00	*	0	-59,909	48.09
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Heat Pkwp		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		-11,975	0	-11,975	-9.68	*		0.00	*		7,544	-6.06
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
Grand Total==>	50,017	13,022	0	123,688	100.00	*	50,308	100.00	*	-56,464	-124,576	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	2,505
Main Clg	10.3	123.7	86.0	2,505	90.0	71.2	85.2	56.9	56.2	67.0	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	2,505
Totals	10.3	123.7									Wall	2,708

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	47.9	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	1,200	1,200	Clg Cfm/Sqft	1.00	SADB	56.9	88.3
Main Htg	-124.6	2,505	43.5	88.3	Infil	217	271	Clg Cfm/Ton	243.02	Plenum	84.0	62.3
Aux Htg	0.0	0	0.0	0.0	Supply	2,505	2,505	Clg Sqft/Ton	243.02	Return	84.0	62.3
Preheat	-37.3	2,505	43.5	56.9	Mincfm	0	0	Clg Btuh/Sqft	49.38	Ret/OA	90.0	43.5
Reheat	0.0	0	0.0	0.0	Return	2,505	2,505	No. People	80	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	1,200	1,200	Htg % OA	47.9	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-124.6				Auxil	0	0	Htg Btuh/SqFt	-49.73	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
F L SYSTEM

January			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	33.4	31.1	-158,345	0.0		-145,758	0.0		-145,758	0.0		-145,758	0.0		-145,758	0.0	
2	32.9	30.7	-149,947	0.0		-149,110	0.0		-149,110	0.0		-149,110	0.0		-149,110	0.0	
3	33.1	31.3	-130,892	0.0		-150,954	0.0		-150,954	0.0		-150,954	0.0		-150,954	0.0	
4	33.9	32.1	-132,276	0.0		-150,304	0.0		-150,304	0.0		-150,304	0.0		-150,304	0.0	
5	35.2	33.5	-126,519	0.0		-149,570	0.0		-149,570	0.0		-149,570	0.0		-149,570	0.0	
6	37.0	35.4	-127,166	0.0		-145,592	0.0		-145,592	0.0		-145,592	0.0		-145,592	0.0	
7	39.0	37.6	-125,276	0.0		-140,819	0.0		-140,819	0.0		-140,819	0.0		-140,819	0.0	
8	41.3	40.1	-121,009	0.0		-135,596	0.0		-135,596	0.0		-135,596	0.0		-135,596	0.0	
9	43.7	42.5	-97,260	0.0		-118,417	0.0		-118,417	0.0		-118,417	0.0		-118,417	0.0	
10	46.1	44.0	-66,746	0.0		-100,637	0.0		-100,637	0.0		-100,637	0.0		-100,637	0.0	
11	48.4	45.0	-36,396	0.0		-81,921	0.0		-81,921	0.0		-81,921	0.0		-81,921	0.0	
12	50.5	45.6	-17,648	0.0		-69,787	0.0		-69,787	0.0		-69,787	0.0		-69,787	0.0	
13	52.2	46.1	-13,617	0.0		-60,012	0.0		-60,012	0.0		-60,012	0.0		-60,012	0.0	
14	53.5	46.4	-10,048	0.0		-50,518	0.0		-50,518	0.0		-50,518	0.0		-50,518	0.0	
15	54.3	46.3	-8,871	1.0		-46,684	0.0		-46,684	0.0		-46,684	0.0		-46,684	0.0	
16	54.6	46.1	-11,450	2.2		-46,054	0.0		-46,054	0.0		-46,054	0.0		-46,054	0.0	
17	54.0	45.9	-15,826	1.6		-51,470	0.0		-51,470	0.0		-51,470	0.0		-51,470	0.0	
18	52.5	45.0	-23,570	0.0		-64,900	0.0		-64,900	0.0		-64,900	0.0		-64,900	0.0	
19	50.1	44.8	-43,900	0.0		-77,628	0.0		-77,628	0.0		-77,628	0.0		-77,628	0.0	
20	47.1	43.3	-38,075	0.0		-89,272	0.0		-89,272	0.0		-89,272	0.0		-89,272	0.0	
21	43.7	40.4	-42,163	0.0		-101,933	0.0		-101,933	0.0		-101,933	0.0		-101,933	0.0	
22	40.4	37.3	-67,331	0.0		-115,415	0.0		-115,415	0.0		-115,415	0.0		-115,415	0.0	
23	37.3	34.9	-88,498	0.0		-126,965	0.0		-126,965	0.0		-126,965	0.0		-126,965	0.0	
24	34.9	32.6	-96,626	0.0		-137,606	0.0		-137,606	0.0		-137,606	0.0		-137,606	0.0	

February			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	41.7	38.6	-98,105	0.0		-117,148	0.0		-117,148	0.0		-117,148	0.0		-117,148	0.0	
2	39.7	37.1	-104,302	0.0		-125,023	0.0		-125,023	0.0		-125,023	0.0		-125,023	0.0	
3	37.8	35.1	-111,347	0.0		-132,874	0.0		-132,874	0.0		-132,874	0.0		-132,874	0.0	
4	36.3	33.8	-116,096	0.0		-138,626	0.0		-138,626	0.0		-138,626	0.0		-138,626	0.0	
5	35.1	32.6	-119,695	0.0		-145,810	0.0		-145,810	0.0		-145,810	0.0		-145,810	0.0	
6	34.4	32.0	-121,293	0.0		-149,313	0.0		-149,313	0.0		-149,313	0.0		-149,313	0.0	
7	34.1	31.9	-120,200	0.0		-151,962	0.0		-151,962	0.0		-151,962	0.0		-151,962	0.0	
8	34.6	32.4	-112,255	0.0		-150,807	0.0		-150,807	0.0		-150,807	0.0		-150,807	0.0	
9	36.0	33.8	-85,842	0.0		-135,489	0.0		-135,489	0.0		-135,489	0.0		-135,489	0.0	
10	38.2	34.7	-54,068	0.0		-118,799	0.0		-118,799	0.0		-118,799	0.0		-118,799	0.0	
11	40.9	36.2	-26,226	0.0		-102,227	0.0		-102,227	0.0		-102,227	0.0		-102,227	0.0	
12	43.9	37.4	-11,563	0.0		-87,289	0.0		-87,289	0.0		-87,289	0.0		-87,289	0.0	
13	46.9	39.4	-8,563	0.0		-72,328	0.0		-72,328	0.0		-72,328	0.0		-72,328	0.0	
14	49.7	41.4	-5,534	0.0		-60,721	0.0		-60,721	0.0		-60,721	0.0		-60,721	0.0	
15	51.8	42.8	-4,706	1.7		-51,449	0.0		-51,449	0.0		-51,449	0.0		-51,449	0.0	
16	53.2	43.9	-7,543	2.3		-49,832	0.0		-49,832	0.0		-49,832	0.0		-49,832	0.0	
17	53.7	44.2	-12,601	1.9		-51,622	0.0		-51,622	0.0		-51,622	0.0		-51,622	0.0	
18	53.4	44.4	-19,544	0.8		-58,506	0.0		-58,506	0.0		-58,506	0.0		-58,506	0.0	
19	52.7	44.4	-35,878	0.0		-69,443	0.0		-69,443	0.0		-69,443	0.0		-69,443	0.0	
20	51.5	45.2	-35,054	0.0		-76,661	0.0		-76,661	0.0		-76,661	0.0		-76,661	0.0	
21	50.0	44.6	-39,429	0.0		-83,771	0.0		-83,771	0.0		-83,771	0.0		-83,771	0.0	
22	48.1	43.3	-56,564	0.0		-90,996	0.0		-90,996	0.0		-90,996	0.0		-90,996	0.0	
23	46.1	41.8	-82,901	0.0		-99,485	0.0		-99,485	0.0		-99,485	0.0		-99,485	0.0	
24	43.9	40.1	-90,821	0.0		-107,121	0.0		-107,121	0.0		-107,121	0.0		-107,121	0.0	

No.	Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday -----		----- Sunday -----		----- Monday -----			
				Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	51.3	46.8	-46,752	0.0	-48,452	0.0	-70,793	0.0	-70,793	0.0	-70,793	0.0			
2	48.7	44.6	-54,191	0.0	-80,934	0.0	-80,922	0.0	-80,922	0.0	-80,922	0.0			
3	46.6	42.9	-61,469	0.0	-89,252	0.0	-89,252	0.0	-89,252	0.0	-89,252	0.0			
4	44.9	41.4	-68,262	0.0	-98,425	0.0	-98,425	0.0	-98,425	0.0	-98,425	0.0			
5	43.9	40.8	-71,398	0.0	-103,295	0.0	-103,295	0.0	-103,295	0.0	-103,295	0.0			
6	43.5	40.8	-72,859	0.0	-107,423	0.0	-107,423	0.0	-107,423	0.0	-107,423	0.0			
7	44.0	41.4	-71,555	0.0	-107,234	0.0	-107,234	0.0	-107,234	0.0	-107,234	0.0			
8	45.4	42.7	-51,832	0.0	-95,956	0.0	-95,956	0.0	-95,956	0.0	-95,956	0.0			
9	47.7	44.3	-21,541	0.0	-77,658	0.0	-77,658	0.0	-77,658	0.0	-77,658	0.0			
10	50.6	45.8	0	0.0	-57,191	0.0	-57,191	0.0	-57,191	0.0	-57,191	0.0			
11	53.9	47.4	0	0.0	-35,336	0.0	-35,336	0.0	-35,336	0.0	-35,336	0.0			
12	57.4	49.0	0	0.1	-16,884	0.0	-16,884	0.0	-16,884	0.0	-16,884	0.0			
13	60.7	50.8	0	4.8	-11,866	0.0	-11,866	0.0	-11,866	0.0	-11,866	0.0			
14	63.6	52.7	0	6.4	-6,675	0.0	-6,675	0.0	-6,675	0.0	-6,675	0.0			
15	65.9	53.7	0	7.0	-4,094	0.0	-4,094	0.0	-4,094	0.0	-4,094	0.0			
16	67.3	54.4	0	6.7	-2,154	0.0	-2,154	0.0	-2,154	0.0	-2,154	0.0			
17	67.8	54.6	0	5.8	-2,973	0.8	-2,973	0.8	-2,973	0.8	-2,973	0.8			
18	67.4	54.8	0	4.0	-5,510	0.7	-5,510	0.7	-5,510	0.7	-5,510	0.7			
19	66.4	55.2	0	1.6	-10,946	0.0	-10,946	0.0	-10,946	0.0	-10,946	0.0			
20	64.7	56.0	0	0.4	-22,001	0.0	-22,001	0.0	-22,001	0.0	-22,001	0.0			
21	62.5	56.0	-3,973	0.0	-17,842	0.0	-17,842	0.0	-17,842	0.0	-17,842	0.0			
22	60.0	54.1	-11,798	0.0	-22,928	0.0	-22,928	0.0	-22,928	0.0	-22,928	0.0			
23	57.1	51.9	-6,527	0.0	-27,869	0.0	-27,869	0.0	-27,869	0.0	-27,869	0.0			
24	54.2	49.4	-21,668	0.0	-51,938	0.0	-51,938	0.0	-51,938	0.0	-51,938	0.0			

April			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	61.0	56.5		-2,176		0.0		-655		0.0		-5,624		0.0		-5,624		0.0		-5,624		0.0
2	58.9	54.9		-9,026		0.0		-1,037		0.0		-19,973		0.0		-19,973		0.0		-19,973		0.0
3	57.0	53.5		-16,870		0.0		-24,461		0.0		-40,026		0.0		-40,026		0.0		-40,026		0.0
4	55.4	52.4		-21,587		0.0		-51,545		0.0		-52,432		0.0		-52,432		0.0		-52,432		0.0
5	54.2	51.4		-25,779		0.0		-58,743		0.0		-58,743		0.0		-58,743		0.0		-58,743		0.0
6	53.5	50.9		-27,508		0.0		-63,073		0.0		-63,073		0.0		-63,073		0.0		-63,073		0.0
7	53.2	51.1		-18,348		0.0		-62,693		0.0		-62,693		0.0		-62,693		0.0		-62,693		0.0
8	53.9	51.5		-4,338		0.0		-51,143		0.0		-51,143		0.0		-51,143		0.0		-51,143		0.0
9	55.9	52.1		0		0.0		-35,239		0.0		-35,239		0.0		-35,239		0.0		-35,239		0.0
10	58.9	53.2		0		1.2		-12,167		0.0		-12,167		0.0		-12,167		0.0		-12,167		0.0
11	62.6	55.2		0		3.6		0		0.0		0		0.0		0		0.0		0		0.0
12	66.5	57.3		0		8.0		0		0.0		0		0.0		0		0.0		0		0.0
13	70.2	59.6		0		9.3		0		0.0		0		0.0		0		0.0		0		0.0
14	73.2	61.0		0		10.2		0		1.0		0		1.0		0		1.0		0		1.0
15	75.2	62.2		0		10.6		0		3.8		0		3.8		0		3.8		0		3.8
16	75.9	62.2		0		10.1		0		4.1		0		4.1		0		4.1		0		4.1
17	75.6	62.0		0		9.1		0		3.7		0		3.7		0		3.7		0		3.7
18	74.9	61.7		0		7.6		0		3.0		0		3.0		0		3.0		0		3.0
19	73.7	62.0		0		5.4		0		1.8		0		1.8		0		1.8		0		1.8
20	72.1	62.4		0		3.4		0		0.7		0		0.7		0		0.7		0		0.7
21	70.2	63.3		0		2.1		0		0.1		0		0.1		0		0.1		0		0.1
22	68.0	62.5		0		1.0		-3,283		0.0		-3,283		0.0		-3,283		0.0		-3,283		0.0
23	65.7	60.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
24	63.4	58.5		-4,490		0.0		0		0.0		0		0.0		0		0.0		0		0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL SYSTEM

May Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	0.0	-4,990	0.0	-4,990	0.0	-4,990	0.0	-4,990	0.0
2	65.7	61.5	0	0.0	-502	0.0	-502	0.0	-502	0.0	-502	0.0
3	63.6	59.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.0	-8,819	0.0	-8,820	0.0	-8,820	0.0	-8,820	0.0
6	59.7	56.5	0	0.0	-29,955	0.0	-29,955	0.0	-29,955	0.0	-29,955	0.0
7	59.4	56.5	0	0.4	-31,151	0.0	-31,151	0.0	-31,151	0.0	-31,151	0.0
8	60.1	56.3	0	2.1	-17,597	0.0	-17,597	0.0	-17,597	0.0	-17,597	0.0
9	62.4	56.3	0	4.0	-3,256	0.0	-3,256	0.0	-3,256	0.0	-3,256	0.0
10	65.7	57.2	0	7.4	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	9.5	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	11.2	0	1.1	0	1.1	0	1.1	0	1.1
13	78.5	63.7	0	12.8	0	4.8	0	4.8	0	4.8	0	4.8
14	81.9	65.3	0	13.4	0	7.1	0	7.1	0	7.1	0	7.1
15	84.1	66.9	0	14.3	0	7.9	0	7.9	0	7.9	0	7.9
16	84.9	67.1	0	13.7	0	8.0	0	8.0	0	8.0	0	8.0
17	84.6	67.3	0	12.7	0	7.6	0	7.6	0	7.6	0	7.6
18	83.8	67.1	0	11.1	0	7.1	0	7.1	0	7.1	0	7.1
19	82.4	67.5	0	9.0	0	6.0	0	6.0	0	6.0	0	6.0
20	80.6	68.9	0	7.0	0	5.0	0	5.0	0	5.0	0	5.0
21	78.5	71.0	0	5.7	0	4.3	0	4.3	0	4.3	0	4.3
22	76.1	69.9	0	4.5	0	3.1	0	3.1	0	3.1	0	3.1
23	73.4	68.0	0	3.4	0	1.6	0	1.6	0	1.6	0	1.6
24	70.8	65.5	0	2.4	0	0.2	0	0.2	0	0.2	0	0.2

June Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	6.2	0	2.7	0	3.1	0	3.1	0	3.1
2	72.6	68.4	0	5.2	0	1.7	0	1.7	0	1.7	0	1.7
3	70.9	67.3	0	4.6	-1,423	0.7	-1,423	0.7	-1,423	0.7	-1,423	0.7
4	69.6	66.5	0	4.0	-4,354	0.1	-4,354	0.1	-4,354	0.1	-4,354	0.1
5	68.7	65.8	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
6	68.5	65.7	0	3.5	0	0.0	0	0.0	0	0.0	0	0.0
7	69.0	66.3	0	5.3	0	0.0	0	0.0	0	0.0	0	0.0
8	70.6	66.9	0	7.8	0	0.9	0	0.9	0	0.9	0	0.9
9	73.0	67.7	0	10.3	0	2.9	0	2.9	0	2.9	0	2.9
10	76.1	68.1	0	12.6	0	5.9	0	5.9	0	5.9	0	5.9
11	79.5	69.1	0	14.7	0	7.9	0	7.9	0	7.9	0	7.9
12	82.9	70.1	0	16.3	0	9.4	0	9.4	0	9.4	0	9.4
13	86.0	71.0	0	17.4	0	10.6	0	10.6	0	10.6	0	10.6
14	88.4	72.5	0	18.4	0	12.3	0	12.3	0	12.3	0	12.3
15	90.0	74.0	0	18.9	0	13.7	0	13.7	0	13.7	0	13.7
16	90.5	73.7	0	18.7	0	13.1	0	13.1	0	13.1	0	13.1
17	90.3	74.2	0	18.0	0	13.2	0	13.2	0	13.2	0	13.2
18	89.4	73.9	0	16.0	0	12.4	0	12.4	0	12.4	0	12.4
19	88.1	74.5	0	14.0	0	11.2	0	11.2	0	11.2	0	11.2
20	86.4	75.3	0	11.4	0	9.6	0	9.6	0	9.6	0	9.6
21	84.3	76.5	0	10.2	0	9.0	0	9.0	0	9.0	0	9.0
22	81.9	75.7	0	9.0	0	8.0	0	8.0	0	8.0	0	8.0
23	79.5	74.0	0	8.1	0	6.5	0	6.5	0	6.5	0	6.5
24	77.0	72.1	0	7.2	0	4.8	0	4.8	0	4.8	0	4.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL SYSTEM

JUL Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	6.8	0	2.0	0	2.3	0	2.3	0	2.3
2	72.4	69.4	0	5.7	0	1.2	0	1.2	0	1.2	0	1.2
3	71.3	68.4	0	5.0	-2,628	0.5	-2,628	0.5	-2,628	0.5	-2,628	0.5
4	70.5	67.7	0	4.5	-4,047	0.0	-4,047	0.0	-4,047	0.0	-4,047	0.0
5	70.0	67.4	0	4.2	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	4.0	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	5.7	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	7.9	0	0.9	0	0.9	0	0.9	0	0.9
9	73.7	69.5	0	10.4	0	3.4	0	3.4	0	3.4	0	3.4
10	76.2	70.6	0	12.5	0	6.7	0	6.7	0	6.7	0	6.7
11	78.9	71.8	0	14.4	0	8.7	0	8.7	0	8.7	0	8.7
12	81.4	73.0	0	16.4	0	10.6	0	10.6	0	10.6	0	10.6
13	83.4	74.4	0	17.4	0	11.6	0	11.6	0	11.6	0	11.6
14	84.8	74.8	0	18.1	0	12.3	0	12.3	0	12.3	0	12.3
15	85.2	75.0	0	18.5	0	12.7	0	12.7	0	12.7	0	12.7
16	85.1	75.0	0	18.2	0	12.3	0	12.3	0	12.3	0	12.3
17	84.6	74.7	0	17.6	0	11.5	0	11.5	0	11.5	0	11.5
18	83.8	74.6	0	15.8	0	10.8	0	10.8	0	10.8	0	10.8
19	82.7	74.6	0	13.8	0	9.8	0	9.8	0	9.8	0	9.8
20	81.4	74.4	0	11.5	0	8.2	0	8.2	0	8.2	0	8.2
21	79.9	74.9	0	10.1	0	7.3	0	7.3	0	7.3	0	7.3
22	78.4	74.0	0	8.9	0	6.0	0	6.0	0	6.0	0	6.0
23	76.8	72.7	0	8.1	0	4.5	0	4.5	0	4.5	0	4.5
24	75.2	71.6	0	7.4	0	3.5	0	3.5	0	3.5	0	3.5

August			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0		6.6		0		2.9		0		3.2		0		3.2
2	73.2	70.3		0		5.2		0		1.8		0		1.8		0		1.8
3	71.7	68.9		0		4.6		-877		0.8		-877		0.8		-877		0.8
4	70.4	67.8		0		4.1		-3,902		0.0		-3,902		0.0		-3,902		0.0
5	69.5	66.8		0		3.5		0		0.0		0		0.0		0		0.0
6	68.9	66.4		0		3.5		0		0.0		0		0.0		0		0.0
7	68.7	66.4		0		4.3		0		0.0		0		0.0		0		0.0
8	69.2	66.8		0		6.9		0		0.0		0		0.0		0		0.0
9	70.8	67.7		0		9.6		0		1.7		0		1.7		0		1.7
10	73.2	67.7		0		12.1		0		3.6		0		3.6		0		3.6
11	76.2	68.8		0		14.2		0		6.8		0		6.8		0		6.8
12	79.3	70.3		0		16.0		0		8.8		0		8.8		0		8.8
13	82.3	72.2		0		17.7		0		10.5		0		10.5		0		10.5
14	84.7	73.7		0		18.6		0		11.8		0		11.8		0		11.8
15	86.3	74.6		0		19.0		0		13.0		0		13.0		0		13.0
16	86.8	75.1		0		18.8		0		12.8		0		12.8		0		12.8
17	86.6	75.1		0		17.2		0		12.4		0		12.4		0		12.4
18	86.0	75.3		0		15.7		0		12.0		0		12.0		0		12.0
19	85.1	76.0		0		13.3		0		10.3		0		10.3		0		10.3
20	83.8	76.8		0		11.2		0		9.3		0		9.3		0		9.3
21	82.3	77.2		0		10.5		0		8.6		0		8.6		0		8.6
22	80.6	76.3		0		8.8		0		7.7		0		7.7		0		7.7
23	78.7	75.3		0		7.9		0		6.1		0		6.1		0		6.1
24	76.8	73.7		0		7.0		0		4.7		0		4.7		0		4.7

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL SYSTEM

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	3.0	-3,501	0.0	-3,501	0.0	-3,501	0.0	-3,501	0.0
2	67.6	65.0	0	1.9	-355	0.0	-355	0.0	-355	0.0	-355	0.0
3	65.8	63.4	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	-153	0.6	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	-2,065	0.5	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	-2,198	0.4	-9,750	0.0	-9,750	0.0	-9,750	0.0	-9,750	0.0
7	62.2	60.2	-1,711	0.5	-28,772	0.0	-28,772	0.0	-28,772	0.0	-28,772	0.0
8	62.9	60.9	0	2.6	-19,540	0.0	-19,540	0.0	-19,540	0.0	-19,540	0.0
9	64.7	61.8	0	5.4	-2,975	0.0	-2,975	0.0	-2,975	0.0	-2,975	0.0
10	67.6	62.1	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	10.2	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	12.0	0	1.2	0	1.2	0	1.2	0	1.2
13	78.3	66.7	0	13.8	0	6.1	0	6.1	0	6.1	0	6.1
14	81.2	68.4	0	14.9	0	7.9	0	7.9	0	7.9	0	7.9
15	83.0	70.0	0	15.4	0	8.9	0	8.9	0	8.9	0	8.9
16	83.7	70.5	0	15.0	0	9.1	0	9.1	0	9.1	0	9.1
17	83.4	70.5	0	13.4	0	8.6	0	8.6	0	8.6	0	8.6
18	82.8	70.9	0	11.3	0	7.6	0	7.6	0	7.6	0	7.6
19	81.6	72.7	0	9.2	0	6.5	0	6.5	0	6.5	0	6.5
20	80.1	74.7	0	8.1	0	6.0	0	6.0	0	6.0	0	6.0
21	78.3	74.1	0	6.8	0	5.2	0	5.2	0	5.2	0	5.2
22	76.3	72.4	0	5.4	0	3.8	0	3.8	0	3.8	0	3.8
23	74.1	70.7	0	4.1	0	2.2	0	2.2	0	2.2	0	2.2
24	71.8	68.9	0	3.3	0	0.6	0	0.6	0	0.6	0	0.6

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	-627	0.0	-35,438	0.0	-62,886	0.0	-62,886	0.0	-62,886	0.0
2	50.1	48.6	-6,408	0.0	-71,206	0.0	-72,646	0.0	-72,646	0.0	-72,646	0.0
3	48.4	46.9	-37,179	0.0	-80,064	0.0	-80,064	0.0	-80,064	0.0	-80,064	0.0
4	47.1	45.8	-57,018	0.0	-86,897	0.0	-86,897	0.0	-86,897	0.0	-86,897	0.0
5	46.3	44.8	-61,045	0.0	-92,814	0.0	-92,814	0.0	-92,814	0.0	-92,814	0.0
6	46.0	44.5	-61,692	0.0	-96,537	0.0	-96,537	0.0	-96,537	0.0	-96,537	0.0
7	46.8	45.3	-59,799	0.0	-95,928	0.0	-95,928	0.0	-95,928	0.0	-95,928	0.0
8	48.9	47.5	-41,237	0.0	-83,120	0.0	-83,120	0.0	-83,120	0.0	-83,120	0.0
9	52.2	49.9	-11,408	0.0	-61,379	0.0	-61,379	0.0	-61,379	0.0	-61,379	0.0
10	56.2	52.5	0	0.0	-37,351	0.0	-37,351	0.0	-37,351	0.0	-37,351	0.0
11	60.4	54.4	0	0.0	-12,951	0.0	-12,951	0.0	-12,951	0.0	-12,951	0.0
12	64.4	56.0	0	1.4	-5,287	0.0	-5,287	0.0	-5,287	0.0	-5,287	0.0
13	67.7	57.3	0	6.1	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	7.1	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	7.5	0	1.3	0	1.3	0	1.3	0	1.3
16	70.3	57.5	0	7.1	0	1.9	0	1.9	0	1.9	0	1.9
17	69.5	57.3	0	6.0	0	1.4	0	1.4	0	1.4	0	1.4
18	68.2	57.7	0	3.7	0	0.5	0	0.5	0	0.5	0	0.5
19	66.5	60.6	0	1.8	-7,043	0.0	-7,043	0.0	-7,043	0.0	-7,043	0.0
20	64.4	60.8	0	0.6	-19,324	0.0	-19,324	0.0	-19,324	0.0	-19,324	0.0
21	62.1	59.4	-1,477	0.0	-16,069	0.0	-16,069	0.0	-16,069	0.0	-16,069	0.0
22	59.6	57.3	-7,891	0.0	-20,875	0.0	-20,875	0.0	-20,875	0.0	-20,875	0.0
23	57.0	55.1	-664	0.0	-25,293	0.0	-25,293	0.0	-25,293	0.0	-25,293	0.0
24	54.5	52.7	-7,834	0.0	-44,245	0.0	-44,245	0.0	-44,245	0.0	-44,245	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL SYSTEM

Month	Hour	----- Design -----			----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
		OADB	OAWB		Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
November	1	52.0	49.2		-51,525		0.0		-59,452		0.0		-67,108		0.0		-67,108		0.0	
	2	49.4	47.3		-60,507		0.0		-77,932		0.0		-77,928		0.0		-77,928		0.0	
	3	47.2	45.3		-66,464		0.0		-86,825		0.0		-86,825		0.0		-86,825		0.0	
	4	45.3	43.4		-73,115		0.0		-94,376		0.0		-94,376		0.0		-94,376		0.0	
	5	43.9	42.2		-76,808		0.0		-102,069		0.0		-102,069		0.0		-102,069		0.0	
	6	43.0	41.4		-76,967		0.0		-107,098		0.0		-107,098		0.0		-107,098		0.0	
	7	42.7	41.2		-75,042		0.0		-110,288		0.0		-110,288		0.0		-110,288		0.0	
	8	43.5	42.0		-64,909		0.0		-107,901		0.0		-107,901		0.0		-107,901		0.0	
	9	45.9	44.0		-35,369		0.0		-90,355		0.0		-90,355		0.0		-90,355		0.0	
	10	49.4	46.6		-3,033		0.0		-66,343		0.0		-66,343		0.0		-66,343		0.0	
	11	53.8	48.6		0		0.0		-45,629		0.0		-45,629		0.0		-45,629		0.0	
	12	58.4	50.6		0		0.0		-26,206		0.0		-26,206		0.0		-26,206		0.0	
	13	62.8	52.6		0		2.7		-16,809		0.0		-16,809		0.0		-16,809		0.0	
	14	66.3	54.5		0		5.6		-10,370		0.0		-10,370		0.0		-10,370		0.0	
	15	68.7	55.7		0		6.3		-5,660		0.0		-5,660		0.0		-5,660		0.0	
	16	69.5	56.1		0		5.9		-4,900		0.0		-4,900		0.0		-4,900		0.0	
	17	69.2	55.8		0		4.5		-5,918		0.3		-5,918		0.3		-5,918		0.3	
	18	68.3	57.0		0		2.4		-8,855		0.1		-8,855		0.1		-8,855		0.1	
	19	66.9	59.4		0		0.9		-16,375		0.0		-16,375		0.0		-16,375		0.0	
	20	65.0	59.4		0		0.1		-14,633		0.0		-14,633		0.0		-14,633		0.0	
	21	62.8	58.2		-7,234		0.0		-18,193		0.0		-18,193		0.0		-18,193		0.0	
	22	60.2	56.1		-642		0.0		-22,714		0.0		-22,714		0.0		-22,714		0.0	
	23	57.5	54.0		-17,477		0.0		-27,884		0.0		-27,884		0.0		-27,884		0.0	
		54.7	51.7		-24,674		0.0		-57,327		0.0		-57,327		0.0		-57,327		0.0	

December			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	44.9	42.5	-73,400			0.0	-100,151			0.0	-100,151			0.0	-100,151			0.0	-100,151			0.0
2	43.2	41.1	-80,413			0.0	-108,509			0.0	-108,510			0.0	-108,510			0.0	-108,510			0.0
3	41.8	39.8	-85,622			0.0	-113,850			0.0	-113,850			0.0	-113,850			0.0	-113,850			0.0
4	40.7	38.7	-90,174			0.0	-119,430			0.0	-119,430			0.0	-119,430			0.0	-119,430			0.0
5	40.1	38.4	-94,685			0.0	-123,237			0.0	-123,237			0.0	-123,237			0.0	-123,237			0.0
6	39.9	38.4	-95,284			0.0	-125,529			0.0	-125,529			0.0	-125,529			0.0	-125,529			0.0
7	40.5	39.0	-94,365			0.0	-126,631			0.0	-126,631			0.0	-126,631			0.0	-126,631			0.0
8	42.2	40.7	-88,605			0.0	-123,298			0.0	-123,298			0.0	-123,298			0.0	-123,298			0.0
9	44.9	43.4	-66,104			0.0	-106,404			0.0	-106,404			0.0	-106,404			0.0	-106,404			0.0
10	48.2	45.8	-36,335			0.0	-85,285			0.0	-85,285			0.0	-85,285			0.0	-85,285			0.0
11	51.7	48.3	-11,292			0.0	-63,893			0.0	-63,893			0.0	-63,893			0.0	-63,893			0.0
12	55.0	50.7	-4,313			0.0	-45,224			0.0	-45,224			0.0	-45,224			0.0	-45,224			0.0
13	57.7	52.0		0		0.0	-32,649			0.0	-32,649			0.0	-32,649			0.0	-32,649			0.0
14	59.5	52.6		0	1.4		-26,998			0.0	-26,998			0.0	-26,998			0.0	-26,998			0.0
15	60.1	52.7		0	2.9		-25,668			0.0	-25,668			0.0	-25,668			0.0	-25,668			0.0
16	59.9	52.6		0	2.8		-26,463			0.0	-26,463			0.0	-26,463			0.0	-26,463			0.0
17	59.2	52.1		0	2.0		-29,036			0.0	-29,036			0.0	-29,036			0.0	-29,036			0.0
18	58.2	51.8	-6,225			0.7	-33,905			0.0	-33,905			0.0	-33,905			0.0	-33,905			0.0
19	56.8	52.2	-19,082			0.0	-50,999			0.0	-50,999			0.0	-50,999			0.0	-50,999			0.0
20	55.0	51.4	-32,916			0.0	-58,870			0.0	-58,870			0.0	-58,870			0.0	-58,870			0.0
21	53.1	50.1	-26,754			0.0	-66,582			0.0	-66,582			0.0	-66,582			0.0	-66,582			0.0
22	51.0	48.1	-30,913			0.0	-74,453			0.0	-74,453			0.0	-74,453			0.0	-74,453			0.0
23	48.9	46.2	-40,433			0.0	-83,257			0.0	-83,257			0.0	-83,257			0.0	-83,257			0.0
24	46.9	44.1	-66,771			0.0	-91,995			0.0	-91,995			0.0	-91,995			0.0	-91,995			0.0

01 Card - Job Information

Project: ENERGY STUDY OF COOLING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORPS OF ENGINEERS
 Program User: BON
 Comments: BLDG 21604 (SIX BLDGS TOTAL)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	BUILDING 21604

-----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	LOW PORTION	83	40	2	2		11.5			

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	HIGH PORTION	37	67.7	2	2		16			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				179			
2	1	YES				179			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	35	10		178	0			
1	2	48	10		47	0			
1	3	13.8	10		178	270			
1	4	24.5	10		47	270			
1	5	16	10		178	180			
1	6	67	10		47	180			
2	1	37	15.5		178	0			
2	2	33	15.5		178	270			
2	3	37	15.5		178	180			
2	4	67.7	15.5		178	90			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	7	3.5	1	1.03	.87					
1	2	3	1	44	1.03	.87					
1	3	7	2	1	1.03	.87					
1	4	6.5	3	6	1.03	.87					

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	6	3	1	59	1.03	.87					
2	4	6.5	3.5	12	1.03	.87					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						
2	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	35	PEOPLE	255	255	7200	WATTS	SUSFLUOR				
2	80	PEOPLE	255	255	6000	WATTS	SUSFLUOR				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	ALL P.C.'S	13.8	KW	FGHEAT						
1	2	ALL PRINTERS	2900	BTUH	FGHEAT						
1	3	COPIER	1.78	KW	FGHEAT						
1	4	FRIG, COKE MACN	2665	BTUH	FGHEAT						
2	1	TYPWTR, MICRO	.42	KW	FGHEAT						
2	2	COFFEE POTS	3000	BTUH	FGHEAT						
2	3	SHREDDER	1	HP	FGHEAT						
2	4	COMM. UNITS	1.15	KW	FGHEAT						
2	5	WATER COOLER	469	BTUH	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----		-----Heating-----		-----Infiltration-----		-----Heating-----		--Reheat Minimum--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

Room Number	Main				Auxiliary				Room Exhaust	
	Cooling		Heating		Cooling		Heating		Value	Units
1	1	CFM-SF	1	CFM-SF						
2	1	CFM-SF	1	CFM-SF						

Room Number	Partition Number	Partition Length	Partition Height	Partition U-Value	Const Type	Temp Flag	Cooling Temp	Heating Temp	Adjacent Room No
1	1	40	10		96				2

----- System Section Alternative #1

-----CARD 39-- System Alternative -----

Number	Description
1	FAN COIL SYSTEM

---CARD 40--- System Type

-----OPTIONAL VENTILATION SYSTEM-----

System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	FC						
2	SZ						

-----CARD 41-- Zone Assignment

[illegible]

-----CARD 42--- Fan SP and Duct Parameters:

System Set Number	Cool Fan SP	Heat Fan SP	Return Fan SP	Mn Exh Fan SP	Aux Fan SP	Rm Exh Fan SP	Cool Fan Mtr Loc	Return Fan Mtr Loc	Supply Duct Ht Gn	Supply Duct Loc	Return Air Path
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Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

FC FAN COIL
SZ SINGLE ZONE

System Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 75
24

Source Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Scenario Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Job Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

Hour	Util Percent
0	100
24	

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**          T R A C E   6 0 0   A N A L Y S I S          **  
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**          by          **  
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ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORPS OF ENGINEERS
MCGINNIS
BUILDING 29601 (3 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 12:22: 9 8/19/94
Dataset Name: FGTYPS1B .TM

5 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)		Mo/Hr: 8/15		*	Mo/Hr: 6/17		*	Mo/Hr: 13/ 1		
Outside Air ==)		OADB/WB/HR: 97/ 76/105.0		*	OADB: 98		*	OADB: 23		
				*			*			
	Space	Ret. Air	Ret. Air	Net	Perct	Space	Perct	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	Sensible	Of Tot	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	(Btuh)	(%)	(Btuh)	(Btuh)	(%)
Envelope Loads										
Skylite Solr	0	0		0	0.00	0	0.00	0	0	0.00
Skylite Cond	0	0		0	0.00	0	0.00	0	0	0.00
Roof Cond	0	41,220		41,220	31.29	0	0.00	0	-22,454	16.69
Glass Solar	16,257	0		16,257	12.34	19,973	39.91	0	0	0.00
Glass Cond	9,329	0		9,329	7.08	10,573	21.13	-23,539	-23,539	17.50
Wall Cond	6,099	1,211		7,310	5.55	6,574	13.13	-9,699	-12,186	9.06
Partition	0			0	0.00	0	0.00	0	0	0.00
Exposed Floor	0			0	0.00	0	0.00	0	0	0.00
Infiltration	7,126			7,126	5.41	4,207	8.41	-10,200	-10,200	7.58
Sub Total==)	38,812	42,431		81,242	61.68	41,327	82.57	-43,437	-68,379	50.84
Internal Loads										
Lights	0	0		0	0.00	0	0.00	0	0	0.00
People	0			0	0.00	0	0.00	0	0	0.00
Misc	0	0	0	0	0.00	0	0.00	0	0	0.00
Sub Total==)	0	0	0	0	0.00	0	0.00	0	0	0.00
Ceiling Load	9,426	-9,426		0	0.00	8,722	17.43	-5,541	0	0.00
Outside Air	0	0	0	65,396	49.65	0	0.00	0	-74,886	55.68
Supply Fan Heat				0	0.00		0.00		0	0.00
Ret. Fan Heat		0		0	0.00		0.00		0	0.00
Duct Heat Pkup		0		0	0.00		0.00		0	0.00
OV/UNDR Sizing	0			0	0.00	0	0.00	0	0	0.00
Exhaust Heat		-14,912	0	-14,912	-11.32		0.00		8,765	-6.52
Terminal Bypass		0	0	0	-0.00		0.00		0	0.00
Grand Total==)	48,238	18,093	0	131,726	100.00	50,049	100.00	-48,978	-134,500	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	3,320
Main Clg	11.0	131.7	99.1	3,320	89.7	71.7	88.8	61.4	60.3	77.2	Part	400
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	3,320
Totals	11.0	131.7									Wall	2,043
												464 23

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----					--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	45.2	Type	Clg	Htg			
(Mbh)	(cfm)	Deg F	Deg F	Vent	1,500	1,500	Clg CfM/Sqft	1.00	SAOB	61.4	81.3			
Main Htg	-134.5	3,320	44.8	81.3	Infil	163	204	Clg CfM/Ton	302.44	Plenum	84.0	62.7		
Aux Htg	0.0	0	0.0	0.0	Supply	3,320	3,320	Clg Sqft/Ton	302.44	Return	84.0	62.7		
Preheat	-61.3	3,320	44.8	61.4	Mincfm	0	0	Clg Btuh/Sqft	39.68	Ret/OA	89.7	44.8		
Reheat	0.0	0	0.0	0.0	Return	3,320	3,320	No. People	100	Runarnd	75.0	68.0		
Humidif	0.0	0	0.0	0.0	Exhaust	1,500	1,500	Htg % OA	45.2	Fn MtrTD	0.0	0.0		
0.0	0.0	0	0.0	0.0	Rm Exh	0	0	Htg CfM/Sqft	1.00	Fn BldTD	0.0	0.0		
Total	-134.5				Auxil	0	0	Htg Btuh/Sqft	-40.51	Fn Frict	0.0	0.0		

5 2 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==> Mo/Hr: 8/15 * Mo/Hr: 6/15 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 97/ 76/105.0 * OADB: 100 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)	(Btuh)	(Btuh)	(%)
Envelope Loads											
Skylite Solr	0	0		0	0.00	*	0	0.00	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	0	0	0.00
Roof Cond	0	31,085		31,085	26.27	*	0	0.00	0	-16,771	13.46
Glass Solar	13,104	0		13,104	11.07	*	13,104	28.55	0	0	0.00
Glass Cond	5,483	0		5,483	4.63	*	6,411	13.97	-13,835	-13,835	11.11
Wall Cond	11,431	1,051		12,483	10.55	*	12,471	27.17	-24,613	-28,087	22.55
Partition	0			0	0.00	*	0	0.00	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	0	0	0.00
Infiltration	10,423			10,423	8.81	*	6,104	13.30	-13,519	-13,519	10.85
Sub Total==>	40,442	32,136		72,578	61.33	*	38,090	83.00	-51,967	-72,211	57.97
Internal Loads						*					
Lights	0	0		0	0.00	*	0	0.00	0	0	0.00
People	0			0	0.00	*	0	0.00	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Ceiling Load	7,139	-7,139		0	0.00	*	7,801	17.00	-4,497	0	0.00
Outside Air	0	0	0	57,738	48.79	*	0	0.00	0	-59,909	48.09
Supply Fan Heat				0	0.00	*		0.00		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	0	0	0.00
Exhaust Heat		-11,975	0	-11,975	-10.12	*		0.00		7,544	-6.06
Terminal Bypass		0	0	0	0.00	*		0.00		0	0.00
Grand Total==>	47,581	13,022	0	118,341	100.00	*	45,891	100.00	-56,464	-124,576	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor		
Main Clg	9.9	118.3	2,505	90.0	71.5	87.0	58.5	57.5	69.8	Part	0	
Aux Clg	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	
Opt Vent	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	2,505	0 0
Totals	9.9	118.3								Wall	2,708	273 10

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----					--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating			Clg % OA	47.9	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	1,200	1,200			Clg Cfm/Sqft	1.00	SAOB	58.5	88.3
Main Htg	-124.6	2,505	43.5	88.3	Infil	217	271			Clg Cfm/Ton	254.00	Plenum	84.0	62.3
Aux Htg	0.0	0	0.0	0.0	Supply	2,505	2,505			Clg Sqft/Ton	254.00	Return	84.0	62.3
Preheat	-41.7	2,505	43.5	58.5	Mincfm	0	0			Clg Btuh/Sqft	47.24	Ret/OA	90.0	43.5
Reheat	0.0	0	0.0	0.0	Return	2,505	2,505			No. People	80	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	1,200	1,200			Htg % OA	47.9	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0			Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0
Total	-124.6				Auxil	0	0			Htg Btuh/Sqft	-49.73	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-180,921	0.0	-182,822	0.0	-182,822	0.0	-182,822	0.0	-182,822	0.0
2	32.9	30.7	-174,787	0.0	-186,567	0.0	-186,567	0.0	-186,567	0.0	-186,567	0.0
3	33.1	31.3	-157,477	0.0	-188,049	0.0	-188,049	0.0	-188,049	0.0	-188,049	0.0
4	33.9	32.1	-160,060	0.0	-186,392	0.0	-186,392	0.0	-186,392	0.0	-186,392	0.0
5	35.2	33.5	-155,129	0.0	-184,240	0.0	-184,240	0.0	-184,240	0.0	-184,240	0.0
6	37.0	35.4	-154,751	0.0	-178,431	0.0	-178,431	0.0	-178,431	0.0	-178,431	0.0
7	39.0	37.6	-151,782	0.0	-171,614	0.0	-171,614	0.0	-171,614	0.0	-171,614	0.0
8	41.3	40.1	-145,446	0.0	-164,022	0.0	-164,022	0.0	-164,022	0.0	-164,022	0.0
9	43.7	42.5	-119,417	0.0	-144,875	0.0	-144,875	0.0	-144,875	0.0	-144,875	0.0
10	46.1	44.0	-86,718	0.0	-125,761	0.0	-125,761	0.0	-125,761	0.0	-125,761	0.0
11	48.4	45.0	-54,750	0.0	-106,191	0.0	-106,191	0.0	-106,191	0.0	-106,191	0.0
12	50.5	45.6	-29,392	0.0	-93,107	0.0	-93,107	0.0	-93,107	0.0	-93,107	0.0
13	52.2	46.1	-13,951	0.0	-82,508	0.0	-82,508	0.0	-82,508	0.0	-82,508	0.0
14	53.5	46.4	-10,292	0.0	-72,282	0.0	-72,282	0.0	-72,282	0.0	-72,282	0.0
15	54.3	46.3	-9,060	0.0	-67,517	0.0	-67,517	0.0	-67,517	0.0	-67,517	0.0
16	54.6	46.1	-11,600	0.0	-65,836	0.0	-65,836	0.0	-65,836	0.0	-65,836	0.0
17	54.0	45.9	-30,370	0.0	-70,950	0.0	-70,950	0.0	-70,950	0.0	-70,950	0.0
18	52.5	45.0	-40,451	0.0	-84,731	0.0	-84,731	0.0	-84,731	0.0	-84,731	0.0
19	50.1	44.8	-62,823	0.0	-99,197	0.0	-99,197	0.0	-99,197	0.0	-99,197	0.0
20	47.1	43.3	-38,719	0.0	-113,629	0.0	-113,629	0.0	-113,629	0.0	-113,629	0.0
21	43.7	40.4	-68,565	0.0	-129,399	0.0	-129,399	0.0	-129,399	0.0	-129,399	0.0
22	40.4	37.3	-100,647	0.0	-146,022	0.0	-146,022	0.0	-146,022	0.0	-146,022	0.0
23	37.3	34.9	-112,422	0.0	-160,504	0.0	-160,504	0.0	-160,504	0.0	-160,504	0.0
24	34.9	32.6	-121,644	0.0	-173,328	0.0	-173,328	0.0	-173,328	0.0	-173,328	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-123,468	0.0	-146,331	0.0	-146,331	0.0	-146,331	0.0	-146,331	0.0
2	39.7	37.1	-130,520	0.0	-156,055	0.0	-156,055	0.0	-156,055	0.0	-156,055	0.0
3	37.8	35.1	-138,095	0.0	-165,659	0.0	-165,659	0.0	-165,659	0.0	-165,659	0.0
4	36.3	33.8	-143,299	0.0	-172,739	0.0	-172,739	0.0	-172,739	0.0	-172,739	0.0
5	35.1	32.6	-146,934	0.0	-181,062	0.0	-181,062	0.0	-181,062	0.0	-181,062	0.0
6	34.4	32.0	-148,054	0.0	-185,168	0.0	-185,168	0.0	-185,168	0.0	-185,168	0.0
7	34.1	31.9	-145,843	0.0	-187,993	0.0	-187,993	0.0	-187,993	0.0	-187,993	0.0
8	34.6	32.4	-136,048	0.0	-186,279	0.0	-186,279	0.0	-186,279	0.0	-186,279	0.0
9	36.0	33.8	-107,918	0.0	-170,191	0.0	-170,191	0.0	-170,191	0.0	-170,191	0.0
10	38.2	34.7	-75,164	0.0	-152,607	0.0	-152,607	0.0	-152,607	0.0	-152,607	0.0
11	40.9	36.2	-47,110	0.0	-135,204	0.0	-135,204	0.0	-135,204	0.0	-135,204	0.0
12	43.9	37.4	-23,970	0.0	-118,918	0.0	-118,918	0.0	-118,918	0.0	-118,918	0.0
13	46.9	39.4	-9,565	0.0	-102,060	0.0	-102,060	0.0	-102,060	0.0	-102,060	0.0
14	49.7	41.4	-6,275	0.0	-88,168	0.0	-88,168	0.0	-88,168	0.0	-88,168	0.0
15	51.8	42.8	-5,282	0.0	-76,762	0.0	-76,762	0.0	-76,762	0.0	-76,762	0.0
16	53.2	43.9	-8,003	0.0	-72,822	0.0	-72,822	0.0	-72,822	0.0	-72,822	0.0
17	53.7	44.2	-12,973	0.0	-72,826	0.0	-72,826	0.0	-72,826	0.0	-72,826	0.0
18	53.4	44.4	-19,847	0.0	-78,766	0.0	-78,766	0.0	-78,766	0.0	-78,766	0.0
19	52.7	44.4	-27,711	0.0	-89,422	0.0	-89,422	0.0	-89,422	0.0	-89,422	0.0
20	51.5	45.2	-57,799	0.0	-97,218	0.0	-97,218	0.0	-97,218	0.0	-97,218	0.0
21	50.0	44.6	-81,900	0.0	-105,528	0.0	-105,528	0.0	-105,528	0.0	-105,528	0.0
22	48.1	43.3	-95,448	0.0	-114,418	0.0	-114,418	0.0	-114,418	0.0	-114,418	0.0
23	46.1	41.8	-106,761	0.0	-124,706	0.0	-124,706	0.0	-124,706	0.0	-124,706	0.0
24	43.9	40.1	-115,478	0.0	-134,378	0.0	-134,378	0.0	-134,378	0.0	-134,378	0.0

March	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	51.3	46.8	-62,918			0.0	-91,371			0.0	-91,372			0.0	-91,372			0.0	-91,372			0.0
2	48.7	44.6	-71,244			0.0	-103,829			0.0	-103,829			0.0	-103,829			0.0	-103,829			0.0
3	46.6	42.9	-79,113			0.0	-114,089			0.0	-114,089			0.0	-114,089			0.0	-114,089			0.0
4	44.9	41.4	-86,540			0.0	-124,647			0.0	-124,647			0.0	-124,647			0.0	-124,647			0.0
5	43.9	40.8	-89,679			0.0	-130,413			0.0	-130,413			0.0	-130,413			0.0	-130,413			0.0
6	43.5	40.8	-90,401			0.0	-134,672			0.0	-134,672			0.0	-134,672			0.0	-134,672			0.0
7	44.0	41.4	-87,742			0.0	-133,902			0.0	-133,902			0.0	-133,902			0.0	-133,902			0.0
8	45.4	42.7	-66,225			0.0	-121,456			0.0	-121,456			0.0	-121,456			0.0	-121,456			0.0
9	47.7	44.3	-34,188			0.0	-101,910			0.0	-101,910			0.0	-101,910			0.0	-101,910			0.0
10	50.6	45.8	-8,985			0.0	-80,790			0.0	-80,790			0.0	-80,790			0.0	-80,790			0.0
11	53.9	47.4	0			0.0	-58,700			0.0	-58,700			0.0	-58,700			0.0	-58,700			0.0
12	57.4	49.0	0			0.0	-38,971			0.0	-38,971			0.0	-38,971			0.0	-38,971			0.0
13	60.7	50.8	0			2.0	-23,645			0.0	-23,645			0.0	-23,645			0.0	-23,645			0.0
14	63.6	52.7	0			5.4	-7,827			0.0	-7,827			0.0	-7,827			0.0	-7,827			0.0
15	65.9	53.7	0			6.0	-4,996			0.0	-4,996			0.0	-4,996			0.0	-4,996			0.0
16	67.3	54.4	0			5.9	-2,875			0.0	-2,875			0.0	-2,875			0.0	-2,875			0.0
17	67.8	54.6	0			5.0	-3,557			0.0	-3,557			0.0	-3,557			0.0	-3,557			0.0
18	67.4	54.8	0			3.2	-5,985			0.0	-5,985			0.0	-5,985			0.0	-5,985			0.0
19	66.4	55.2	0			0.8	-9,872			0.0	-9,872			0.0	-9,872			0.0	-9,872			0.0
20	64.7	56.0	-6,692			0.0	-13,611			0.0	-13,611			0.0	-13,611			0.0	-13,611			0.0
21	62.5	56.0	-17,576			0.0	-32,481			0.0	-32,481			0.0	-32,481			0.0	-32,481			0.0
22	60.0	54.1	-982			0.0	-49,629			0.0	-49,629			0.0	-49,629			0.0	-49,629			0.0
23	57.1	51.9	-6,541			0.0	-62,582			0.0	-62,582			0.0	-62,582			0.0	-62,582			0.0
24	54.2	49.4	-47,561			0.0	-77,579			0.0	-77,579			0.0	-77,579			0.0	-77,579			

April			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	61.0	56.5		-9,018		0.0		-1,075		0.0		-10,844		0.0		-10,844		0.0		-10,844		0.0
2	58.9	54.9		-17,196		0.0		-2,757		0.0		-49,688		0.0		-49,688		0.0		-49,688		0.0
3	57.0	53.5		-25,394		0.0		-60,349		0.0		-60,338		0.0		-60,338		0.0		-60,338		0.0
4	55.4	52.4		-30,509		0.0		-68,645		0.0		-68,654		0.0		-68,654		0.0		-68,654		0.0
5	54.2	51.4		-34,796		0.0		-75,936		0.0		-75,936		0.0		-75,936		0.0		-75,936		0.0
6	53.5	50.9		-35,774		0.0		-80,834		0.0		-80,834		0.0		-80,834		0.0		-80,834		0.0
7	53.2	51.1		-25,609		0.0		-80,727		0.0		-80,727		0.0		-80,727		0.0		-80,727		0.0
8	53.9	51.5		-10,350		0.0		-69,391		0.0		-69,391		0.0		-69,391		0.0		-69,391		0.0
9	55.9	52.1		0		0.0		-53,149		0.0		-53,149		0.0		-53,149		0.0		-53,149		0.0
10	58.9	53.2		0		0.9		-30,076		0.0		-30,076		0.0		-30,076		0.0		-30,076		0.0
11	62.6	55.2		0		3.0		-7,676		0.0		-7,676		0.0		-7,676		0.0		-7,676		0.0
12	66.5	57.3		0		6.5		0		0.0		0		0.0		0		0.0		0		0.0
13	70.2	59.6		0		8.6		0		0.0		0		0.0		0		0.0		0		0.0
14	73.2	61.0		0		9.6		0		0.0		0		0.0		0		0.0		0		0.0
15	75.2	62.2		0		10.1		0		0.6		0		0.6		0		0.6		0		0.6
16	75.9	62.2		0		9.7		0		3.4		0		3.4		0		3.4		0		3.4
17	75.6	62.0		0		8.8		0		3.1		0		3.1		0		3.1		0		3.1
18	74.9	61.7		0		7.3		0		2.5		0		2.5		0		2.5		0		2.5
19	73.7	62.0		0		5.1		0		1.4		0		1.4		0		1.4		0		1.4
20	72.1	62.4		0		3.1		0		0.2		0		0.2		0		0.2		0		0.2
21	70.2	63.3		0		1.6		-4,620		0.0		-4,620		0.0		-4,620		0.0		-4,620		0.0
22	68.0	62.5		0		0.4		-11,273		0.0		-11,273		0.0		-11,273		0.0		-11,273		0.0
23	65.7	60.5		-7,721		0.0		-691		0.0		-691		0.0		-691		0.0		-691		0.0
24	63.4	58.5		-13,436		0.0		0		0.0		0		0.0		0		0.0		0		0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5	0	0.0			-12,149		0.0		-12,149		0.0		-12,149		0.0		-12,149		0.0	
2	65.7	61.5	0	0.0			-752		0.0		-752		0.0		-752		0.0		-752		0.0	
3	63.6	59.7	0	0.0			0		0.0		0		0.0		0		0.0		0		0.0	
4	61.8	58.4	0	0.0			-2,102		0.0		-2,102		0.0		-2,102		0.0		-2,102		0.0	
5	60.5	57.1	0	0.0			-36,219		0.0		-36,219		0.0		-36,219		0.0		-36,219		0.0	
6	59.7	56.5	0	0.0			-47,778		0.0		-47,778		0.0		-47,778		0.0		-47,778		0.0	
7	59.4	56.5	0	0.3			-43,585		0.0		-43,585		0.0		-43,585		0.0		-43,585		0.0	
8	60.1	56.3	0	2.1			-30,383		0.0		-30,383		0.0		-30,383		0.0		-30,383		0.0	
9	62.4	56.3	0	3.2			-14,868		0.0		-14,868		0.0		-14,868		0.0		-14,868		0.0	
10	65.7	57.2	0	6.0			-1,842		0.0		-1,842		0.0		-1,842		0.0		-1,842		0.0	
11	69.9	58.9	0	9.2			0		0.0		0		0.0		0		0.0		0		0.0	
12	74.3	60.9	0	11.1			0		0.2		0		0.2		0		0.2		0		0.2	
13	78.5	63.7	0	12.9			0		3.0		0		3.0		0		3.0		0		3.0	
14	81.9	65.3	0	13.6			0		6.7		0		6.7		0		6.7		0		6.7	
15	84.1	66.9	0	14.5			0		7.7		0		7.7		0		7.7		0		7.7	
16	84.9	67.1	0	13.9			0		8.0		0		8.0		0		8.0		0		8.0	
17	84.6	67.3	0	13.1			0		7.7		0		7.7		0		7.7		0		7.7	
18	83.8	67.1	0	11.5			0		7.3		0		7.3		0		7.3		0		7.3	
19	82.4	67.5	0	9.4			0		6.2		0		6.2		0		6.2		0		6.2	
20	80.6	68.9	0	7.2			0		5.2		0		5.2		0		5.2		0		5.2	
21	78.5	71.0	0	5.7			0		4.8		0		4.8		0		4.8		0		4.8	
22	76.1	69.9	0	4.4			0		3.1		0		3.1		0		3.1		0		3.1	
23	73.4	68.0	0	3.2			0		1.4		0		1.4		0		1.4		0		1.4	
24	70.8	65.5	0	2.2			-4,615		0.2		-4,615		0.2		-4,615		0.2		-4,615		0.2	

June	----- Design -----					----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0	6.4		0		2.8		0		3.1		0		3.1		0		3.1
2	72.6	68.4		0	5.4		0		1.4		0		1.3		0		1.3		0		1.3
3	70.9	67.3		0	4.8		-5,608		0.6		-5,608		0.6		-5,608		0.6		-5,608		0.6
4	69.6	66.5		0	4.2		-9,646		0.1		-9,646		0.1		-9,646		0.1		-9,646		0.1
5	68.7	65.8		0	3.8		0		0.0		0		0.0		0		0.0		0		0.0
6	68.5	65.7		0	3.8		0		0.0		0		0.0		0		0.0		0		0.0
7	69.0	66.3		0	5.6		0		0.0		0		0.0		0		0.0		0		0.0
8	70.6	66.9		0	8.2		0		0.8		0		0.8		0		0.8		0		0.8
9	73.0	67.7		0	10.6		0		2.7		0		2.7		0		2.7		0		2.7
10	76.1	68.1		0	12.9		0		3.8		0		3.8		0		3.8		0		3.8
11	79.5	69.1		0	15.0		0		7.3		0		7.3		0		7.3		0		7.3
12	82.9	70.1		0	17.0		0		9.0		0		9.0		0		9.0		0		9.0
13	86.0	71.0		0	18.6		0		10.6		0		10.6		0		10.6		0		10.6
14	88.4	72.5		0	19.7		0		12.8		0		12.8		0		12.8		0		12.8
15	90.0	74.0		0	20.3		0		14.7		0		14.7		0		14.7		0		14.7
16	90.5	73.7		0	20.2		0		13.9		0		13.9		0		13.9		0		13.9
17	90.3	74.2		0	19.5		0		14.4		0		14.4		0		14.4		0		14.4
18	89.4	73.9		0	17.3		0		13.8		0		13.8		0		13.8		0		13.8
19	88.1	74.5		0	15.2		0		12.6		0		12.6		0		12.6		0		12.6
20	86.4	75.3		0	12.4		0		11.1		0		11.1		0		11.1		0		11.1
21	84.3	76.5		0	11.2		0		10.9		0		10.9		0		10.9		0		10.9
22	81.9	75.7		0	9.8		0		9.6		0		9.6		0		9.6		0		9.6
23	79.5	74.0		0	8.6		0		7.5		0		7.5		0		7.5		0		7.5
24	77.0	72.1		0	7.6		0		5.2		0		5.2		0		5.2		0		5.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	7.1	0	1.9	0	2.1	0	2.1	0	2.1
2	72.4	69.4	0	5.9	-1,687	1.0	-1,687	1.0	-1,687	1.0	-1,687	1.0
3	71.3	68.4	0	5.3	-6,264	0.5	-6,264	0.5	-6,264	0.5	-6,264	0.5
4	70.5	67.7	0	4.8	-8,372	0.0	-8,372	0.0	-8,372	0.0	-8,372	0.0
5	70.0	67.4	0	4.5	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	6.2	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	8.5	0	0.9	0	0.9	0	0.9	0	0.9
9	73.7	69.5	0	10.8	0	3.2	0	3.2	0	3.2	0	3.2
10	76.2	70.6	0	12.8	0	4.8	0	4.8	0	4.8	0	4.8
11	78.9	71.8	0	14.7	0	8.4	0	8.4	0	8.4	0	8.4
12	81.4	73.0	0	17.2	0	10.6	0	10.6	0	10.6	0	10.6
13	83.4	74.4	0	18.6	0	12.1	0	12.1	0	12.1	0	12.1
14	84.8	74.8	0	19.4	0	12.9	0	12.9	0	12.9	0	12.9
15	85.2	75.0	0	19.8	0	13.4	0	13.4	0	13.4	0	13.4
16	85.1	75.0	0	19.8	0	13.2	0	13.2	0	13.2	0	13.2
17	84.6	74.7	0	19.2	0	12.5	0	12.5	0	12.5	0	12.5
18	83.8	74.6	0	17.3	0	11.9	0	11.9	0	11.9	0	11.9
19	82.7	74.6	0	15.3	0	11.2	0	11.2	0	11.2	0	11.2
20	81.4	74.4	0	12.7	0	9.5	0	9.5	0	9.5	0	9.5
21	79.9	74.9	0	11.0	0	8.6	0	8.6	0	8.6	0	8.6
22	78.4	74.0	0	9.7	0	6.8	0	6.8	0	6.8	0	6.8
23	76.8	72.7	0	8.8	0	4.9	0	4.9	0	4.9	0	4.9
24	75.2	71.6	0	8.0	0	3.6	0	3.6	0	3.6	0	3.6

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	6.8	0	3.1	0	3.4	0	3.4	0	3.4
2	73.2	70.3	0	5.4	0	1.4	0	1.4	0	1.4	0	1.4
3	71.7	68.9	0	4.8	-4,314	0.8	-4,314	0.8	-4,314	0.8	-4,314	0.8
4	70.4	67.8	0	4.3	-8,425	0.0	-8,425	0.0	-8,425	0.0	-8,425	0.0
5	69.5	66.8	0	3.7	0	0.0	0	0.0	0	0.0	0	0.0
6	68.9	66.4	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	4.6	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	7.3	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	10.1	0	1.5	0	1.5	0	1.5	0	1.5
10	73.2	67.7	0	12.5	0	3.1	0	3.1	0	3.1	0	3.1
11	76.2	68.8	0	14.7	0	4.3	0	4.3	0	4.3	0	4.3
12	79.3	70.3	0	16.6	0	8.1	0	8.1	0	8.1	0	8.1
13	82.3	72.2	0	18.8	0	10.4	0	10.4	0	10.4	0	10.4
14	84.7	73.7	0	19.8	0	11.9	0	11.9	0	11.9	0	11.9
15	86.3	74.6	0	20.5	0	13.8	0	13.8	0	13.8	0	13.8
16	86.8	75.1	0	20.5	0	13.9	0	13.9	0	13.9	0	13.9
17	86.6	75.1	0	18.8	0	13.6	0	13.6	0	13.6	0	13.6
18	86.0	75.3	0	17.3	0	13.7	0	13.7	0	13.7	0	13.7
19	85.1	76.0	0	14.7	0	11.9	0	11.9	0	11.9	0	11.9
20	83.8	76.8	0	12.4	0	11.1	0	11.1	0	11.1	0	11.1
21	82.3	77.2	0	11.7	0	10.5	0	10.5	0	10.5	0	10.5
22	80.6	76.3	0	9.6	0	9.4	0	9.4	0	9.4	0	9.4
23	78.7	75.3	0	8.5	0	7.2	0	7.2	0	7.2	0	7.2
24	76.8	73.7	0	7.6	0	5.3	0	5.3	0	5.3	0	5.3

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	2.8	-9,086	0.0	-9,086	0.0	-9,086	0.0	-9,086	0.0
2	67.6	65.0	0	1.7	-567	0.0	-567	0.0	-567	0.0	-567	0.0
3	65.8	63.4	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	-2,898	0.6	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	-4,837	0.4	-10,841	0.0	-10,841	0.0	-10,841	0.0	-10,841	0.0
6	62.4	60.3	-4,485	0.4	-33,139	0.0	-33,139	0.0	-33,139	0.0	-33,139	0.0
7	62.2	60.2	-2,765	0.5	-39,446	0.0	-39,446	0.0	-39,446	0.0	-39,446	0.0
8	62.9	60.9	0	2.5	-28,520	0.0	-28,520	0.0	-28,520	0.0	-28,520	0.0
9	64.7	61.8	0	5.4	-11,376	0.0	-11,376	0.0	-11,376	0.0	-11,376	0.0
10	67.6	62.1	0	8.1	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	10.0	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	11.8	0	0.6	0	0.6	0	0.6	0	0.6
13	78.3	66.7	0	14.0	0	4.3	0	4.3	0	4.3	0	4.3
14	81.2	68.4	0	15.3	0	7.4	0	7.4	0	7.4	0	7.4
15	83.0	70.0	0	16.0	0	8.8	0	8.8	0	8.8	0	8.8
16	83.7	70.5	0	15.8	0	9.3	0	9.3	0	9.3	0	9.3
17	83.4	70.5	0	14.1	0	8.9	0	8.9	0	8.9	0	8.9
18	82.8	70.9	0	11.9	0	8.2	0	8.2	0	8.2	0	8.2
19	81.6	72.7	0	9.9	0	7.2	0	7.2	0	7.2	0	7.2
20	80.1	74.7	0	8.7	0	7.1	0	7.1	0	7.1	0	7.1
21	78.3	74.1	0	7.1	0	6.0	0	6.0	0	6.0	0	6.0
22	76.3	72.4	0	5.4	0	4.1	0	4.1	0	4.1	0	4.1
23	74.1	70.7	0	4.0	0	2.0	0	2.0	0	2.0	0	2.0
24	71.8	68.9	0	3.2	-1,975	0.4	-1,975	0.4	-1,975	0.4	-1,975	0.4

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	-1,135	0.0	-75,448	0.0	-82,089	0.0	-82,089	0.0	-82,089	0.0
2	50.1	48.6	-18,530	0.0	-93,813	0.0	-93,814	0.0	-93,814	0.0	-93,814	0.0
3	48.4	46.9	-66,278	0.0	-102,643	0.0	-102,643	0.0	-102,643	0.0	-102,643	0.0
4	47.1	45.8	-72,520	0.0	-110,716	0.0	-110,716	0.0	-110,716	0.0	-110,716	0.0
5	46.3	44.8	-76,703	0.0	-117,213	0.0	-117,213	0.0	-117,213	0.0	-117,213	0.0
6	46.0	44.5	-76,644	0.0	-121,234	0.0	-121,234	0.0	-121,234	0.0	-121,234	0.0
7	46.8	45.3	-73,313	0.0	-119,612	0.0	-119,612	0.0	-119,612	0.0	-119,612	0.0
8	48.9	47.5	-52,978	0.0	-105,021	0.0	-105,021	0.0	-105,021	0.0	-105,021	0.0
9	52.2	49.9	-21,057	0.0	-80,962	0.0	-80,962	0.0	-80,962	0.0	-80,962	0.0
10	56.2	52.5	0	0.0	-54,775	0.0	-54,775	0.0	-54,775	0.0	-54,775	0.0
11	60.4	54.4	0	0.0	-28,413	0.0	-28,413	0.0	-28,413	0.0	-28,413	0.0
12	64.4	56.0	0	0.2	-6,176	0.0	-6,176	0.0	-6,176	0.0	-6,176	0.0
13	67.7	57.3	0	4.9	-976	0.0	-976	0.0	-976	0.0	-976	0.0
14	69.8	58.2	0	6.7	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	7.2	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	6.9	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	5.7	0	0.5	0	0.5	0	0.5	0	0.5
18	68.2	57.7	0	3.4	-2,424	0.0	-2,424	0.0	-2,424	0.0	-2,424	0.0
19	66.5	60.6	0	1.4	-17,326	0.0	-17,326	0.0	-17,326	0.0	-17,326	0.0
20	64.4	60.8	-888	0.0	-30,410	0.0	-30,410	0.0	-30,410	0.0	-30,410	0.0
21	62.1	59.4	-11,493	0.0	-16,513	0.0	-16,513	0.0	-16,513	0.0	-16,513	0.0
22	59.6	57.3	-20,061	0.0	-20,961	0.0	-20,961	0.0	-20,961	0.0	-20,961	0.0
23	57.0	55.1	-1,057	0.0	-51,541	0.0	-51,541	0.0	-51,541	0.0	-51,541	0.0
24	54.5	52.7	-8,264	0.0	-71,185	0.0	-71,185	0.0	-71,185	0.0	-71,185	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-67,223	0.0	-86,219	0.0	-86,218	0.0	-86,218	0.0	-86,218	0.0
2	49.4	47.3	-77,323	0.0	-99,572	0.0	-99,572	0.0	-99,572	0.0	-99,572	0.0
3	47.2	45.3	-84,310	0.0	-110,576	0.0	-110,576	0.0	-110,576	0.0	-110,576	0.0
4	45.3	43.4	-91,545	0.0	-119,912	0.0	-119,912	0.0	-119,912	0.0	-119,912	0.0
5	43.9	42.2	-95,414	0.0	-128,854	0.0	-128,854	0.0	-128,854	0.0	-128,854	0.0
6	43.0	41.4	-94,906	0.0	-134,591	0.0	-134,591	0.0	-134,591	0.0	-134,591	0.0
7	42.7	41.2	-91,559	0.0	-137,970	0.0	-137,970	0.0	-137,970	0.0	-137,970	0.0
8	43.5	42.0	-79,071	0.0	-134,711	0.0	-134,711	0.0	-134,711	0.0	-134,711	0.0
9	45.9	44.0	-46,748	0.0	-115,449	0.0	-115,449	0.0	-115,449	0.0	-115,449	0.0
10	49.4	46.6	-11,459	0.0	-89,180	0.0	-89,180	0.0	-89,180	0.0	-89,180	0.0
11	53.8	48.6	0	0.0	-65,540	0.0	-65,540	0.0	-65,540	0.0	-65,540	0.0
12	58.4	50.6	0	0.0	-42,628	0.0	-42,628	0.0	-42,628	0.0	-42,628	0.0
13	62.8	52.6	0	1.6	-22,892	0.0	-22,892	0.0	-22,892	0.0	-22,892	0.0
14	66.3	54.5	0	5.2	-10,496	0.0	-10,496	0.0	-10,496	0.0	-10,496	0.0
15	68.7	55.7	0	6.2	-5,758	0.0	-5,758	0.0	-5,758	0.0	-5,758	0.0
16	69.5	56.1	0	5.8	-4,979	0.0	-4,979	0.0	-4,979	0.0	-4,979	0.0
17	69.2	55.8	0	4.4	-5,982	0.0	-5,982	0.0	-5,982	0.0	-5,982	0.0
18	68.3	57.0	0	2.1	-8,907	0.0	-8,907	0.0	-8,907	0.0	-8,907	0.0
19	66.9	59.4	0	0.4	-11,401	0.0	-11,401	0.0	-11,401	0.0	-11,401	0.0
20	65.0	59.4	-7,895	0.0	-14,222	0.0	-14,222	0.0	-14,222	0.0	-14,222	0.0
21	62.8	58.2	-18,863	0.0	-25,837	0.0	-25,837	0.0	-25,837	0.0	-25,837	0.0
22	60.2	56.1	-1,053	0.0	-48,277	0.0	-48,277	0.0	-48,277	0.0	-48,277	0.0
23	57.5	54.0	-17,642	0.0	-61,050	0.0	-61,050	0.0	-61,050	0.0	-61,050	0.0
24	54.7	51.7	-54,277	0.0	-73,959	0.0	-73,959	0.0	-73,959	0.0	-73,959	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-92,502	0.0	-126,005	0.0	-126,005	0.0	-126,005	0.0	-126,005	0.0
2	43.2	41.1	-100,443	0.0	-135,934	0.0	-135,934	0.0	-135,934	0.0	-135,934	0.0
3	41.8	39.8	-106,369	0.0	-142,649	0.0	-142,649	0.0	-142,649	0.0	-142,649	0.0
4	40.7	38.7	-111,426	0.0	-149,155	0.0	-149,155	0.0	-149,155	0.0	-149,155	0.0
5	40.1	38.4	-116,121	0.0	-153,476	0.0	-153,476	0.0	-153,476	0.0	-153,476	0.0
6	39.9	38.4	-116,040	0.0	-155,851	0.0	-155,851	0.0	-155,851	0.0	-155,851	0.0
7	40.5	39.0	-114,030	0.0	-156,299	0.0	-156,299	0.0	-156,299	0.0	-156,299	0.0
8	42.2	40.7	-106,441	0.0	-151,122	0.0	-151,122	0.0	-151,122	0.0	-151,122	0.0
9	44.9	43.4	-81,755	0.0	-131,937	0.0	-131,937	0.0	-131,937	0.0	-131,937	0.0
10	48.2	45.8	-50,254	0.0	-108,384	0.0	-108,384	0.0	-108,384	0.0	-108,384	0.0
11	51.7	48.3	-21,209	0.0	-84,831	0.0	-84,831	0.0	-84,831	0.0	-84,831	0.0
12	55.0	50.7	-4,576	0.0	-64,124	0.0	-64,124	0.0	-64,124	0.0	-64,124	0.0
13	57.7	52.0	0	0.0	-49,638	0.0	-49,638	0.0	-49,638	0.0	-49,638	0.0
14	59.5	52.6	0	0.0	-39,013	0.0	-39,013	0.0	-39,013	0.0	-39,013	0.0
15	60.1	52.7	0	1.2	-35,287	0.0	-35,287	0.0	-35,287	0.0	-35,287	0.0
16	59.9	52.6	0	2.0	-35,803	0.0	-35,803	0.0	-35,803	0.0	-35,803	0.0
17	59.2	52.1	0	1.2	-44,241	0.0	-44,241	0.0	-44,241	0.0	-44,241	0.0
18	58.2	51.8	-9,036	0.0	-56,335	0.0	-56,335	0.0	-56,335	0.0	-56,335	0.0
19	56.8	52.2	-31,716	0.0	-65,824	0.0	-65,824	0.0	-65,824	0.0	-65,824	0.0
20	55.0	51.4	-47,766	0.0	-75,214	0.0	-75,214	0.0	-75,214	0.0	-75,214	0.0
21	53.1	50.1	-27,200	0.0	-84,684	0.0	-84,684	0.0	-84,684	0.0	-84,684	0.0
22	51.0	48.1	-40,680	0.0	-94,539	0.0	-94,539	0.0	-94,539	0.0	-94,539	0.0
23	48.9	46.2	-76,351	0.0	-105,333	0.0	-105,333	0.0	-105,333	0.0	-105,333	0.0
24	46.9	44.1	-85,065	0.0	-115,958	0.0	-115,958	0.0	-115,958	0.0	-115,958	0.0

1 Card - Job Information

Project: ENERGY STUDY OF COOLING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORPS OF ENGINEERS
 Program User: MCGINNIS
 Comments: BUILDING 29601 (3 BUILDINGS)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	BUILDING 29601

-----CARD 20-- General Room Parameters -----

Room	Zone					Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per
	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone
1	1	LOW PORTION	83	40	2	2		11.5		

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	HIGH PORTION	37	67.7	2	2		16			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	Heating T'stat Location Flag	T'stat Location	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST			LIGHT30	NO
2		50		CLGCONST			HTGCONST			LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				179			
2	1	YES				179			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	35	10		178	0			
1	2	48	10		47	0			
1	3	13.8	10		178	270			
1	4	24.5	10		47	270			
1	5	16	10		178	180			
1	6	67	10		47	180			
2	1	37	15.5		178	0			
2	2	33	15.5		178	270			
2	3	37	15.5		178	180			
2	4	67.7	15.5		178	90			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret.	Percent Air Transmittance	Visible Transmittance	Inside Visible Reflectance
1	1	7	3.5	1	1.03	.87	3					
1	2	3	1	44	1.03	.87	3					
1	3	7	2	1	1.03	.87	3					
1	4	6.5	3	6	1.03	.87	3					

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	6	3	1	59	1.03	.87	3				
2	4	6.5	3.5	12	1.03	.87	3				

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						
2	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	100	PEOPLE	255	255	7200	WATTS	SUSFLUOR				
2	80	PEOPLE	255	255	6000	WATTS	SUSFLUOR				

-----CARD 28-- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	ALL P.C.'S	25.9	KW	FGHEAT						
1	2	ALL PRINTERS	2.50	KW	FGHEAT						
1	3	COPIER	11.5	KW	FGHEAT						
1	4	FRIG, COKE MACN	2.8	KW	FGHEAT						
2	1	TYPWTR, MICRO	.42	KW	FGHEAT						
2	2	COFFEE POTS	3000	BTUH	FGHEAT						
2	3	OVEN	10.8	KW	FGHEAT						

-----CARD 29-- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling----- Value	Units	-----Heating----- Value	Units	-----Cooling----- Value	Units	-----Heating----- Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

Room Number	Main				Auxiliary				Room Exhaust	
	Cooling		Heating		Cooling		Heating		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1		CFM-SF	1	CFM-SF						
1		CFM-SF	1	CFM-SF						

Room Number	Partition Number	Partition Length	Partition Height	Partition U-Value	Const Type	Temp Flag	Cooling Temp	Heating Temp	Adjacent Room No
	1	40	10		96				2

Shading Type	-----OVERHANG-----			-----VERTICAL FINS-----					
	Glass Height	Above Glass	Projection Out	Glass Width	Projection Left	Projection Out	Projection Right	Projection Out	Adjacent Building Flag
3	6.5	1.33	3						

System		-----OPTIONAL VENTILATION SYSTEM-----					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBvh	SADBvh	Schedule	Schedule	Pressure
1	FC						
2	SZ						

[illegible][illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

FC FAN COIL
SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Sample Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 72
24

Machine Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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*****  
*****  
**                                     **  
**          TRACE    6 0 0    ANALYSIS          **  
**                                     **  
**          by              **  
**                                     **  
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ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORPS OF ENGINEERS
MCGINNIS
BUILDING 29610 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Reflectance: 0.20
Winter Ground Reflectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 19:23:45 8/12/94
Dataset Name: FGTYP51C .TM

SYSTEM LOAD PROFILE - ALTERNATIVE 1

Main System 1 SZ SINGLE ZONE

Percent Design Load	---- Cooling Load ----			----- Heating Load -----			---- Cooling Airflow ----			---- Heating Airflow ----		
	Cap. (Ton)	Hours (%)	Hours	Capacity (Btuh)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours
0 - 5	1.6	8	342	-7,450	12	240	1,036.6	0	0	0.0	0	0
5 - 10	3.2	7	288	-14,900	4	75	2,073.2	0	0	0.0	0	0
10 - 15	4.8	10	435	-22,350	3	65	3,109.9	0	0	0.0	0	0
15 - 20	6.5	9	407	-29,799	2	38	4,146.5	0	0	0.0	0	0
20 - 25	8.1	7	302	-37,249	2	31	5,183.1	0	0	0.0	0	0
25 - 30	9.7	6	248	-44,699	2	31	6,219.7	0	0	0.0	0	0
30 - 35	11.3	7	292	-52,149	1	17	7,256.4	0	0	0.0	0	0
35 - 40	12.9	8	358	-59,599	5	98	8,293.0	0	0	0.0	0	0
40 - 45	14.5	5	218	-67,049	8	150	9,329.6	0	0	0.0	0	0
45 - 50	16.2	5	221	-74,498	10	188	10,366.2	0	0	0.0	0	0
50 - 55	17.8	4	193	-81,948	15	285	11,402.9	0	0	0.0	0	0
55 - 60	19.4	5	201	-89,398	10	197	12,439.5	0	0	0.0	0	0
60 - 65	21.0	6	237	-96,848	11	211	13,476.1	0	0	0.0	0	0
65 - 70	22.6	3	129	-104,298	4	73	14,512.7	0	0	0.0	0	0
70 - 75	24.2	6	256	-111,748	8	149	15,549.3	0	0	0.0	0	0
75 - 80	25.8	4	168	-119,198	5	90	16,586.0	0	0	0.0	0	0
80 - 85	27.5	0	0	-126,647	1	14	17,622.6	0	0	0.0	0	0
85 - 90	29.1	0	0	-134,097	0	0	18,659.2	0	0	0.0	0	0
90 - 95	30.7	0	0	-141,547	0	0	19,695.8	0	0	0.0	0	0
95 - 100	32.3	0	0	-148,997	0	0	20,732.5	100	8,760	0.0	0	0
Hours Off	0.0	0	4,465	0	0	6,808	0.0	0	0	0.0	0	8,760

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 1

----- SYSTEM LOAD PROFILE -----

System Totals

Percent Design Load	---- Cooling Load ----			----- Heating Load -----			---- Cooling Airflow ----			---- Heating Airflow ----		
	Cap. (Ton)	Hours (%)	Hours	Capacity (Btuh)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours
0 - 5	1.6	8	342	-7,450	12	240	1,036.6	0	0	0.0	0	0
5 - 10	3.2	7	288	-14,900	4	75	2,073.2	0	0	0.0	0	0
10 - 15	4.8	10	435	-22,350	3	65	3,109.9	0	0	0.0	0	0
15 - 20	6.5	9	407	-29,799	2	38	4,146.5	0	0	0.0	0	0
20 - 25	8.1	7	302	-37,249	2	31	5,183.1	0	0	0.0	0	0
25 - 30	9.7	6	248	-44,699	2	31	6,219.7	0	0	0.0	0	0
30 - 35	11.3	7	292	-52,149	1	17	7,256.4	0	0	0.0	0	0
35 - 40	12.9	8	358	-59,599	5	98	8,293.0	0	0	0.0	0	0
40 - 45	14.5	5	218	-67,049	8	150	9,329.6	0	0	0.0	0	0
45 - 50	16.2	5	221	-74,498	10	188	10,366.2	0	0	0.0	0	0
50 - 55	17.8	4	193	-81,948	15	285	11,402.9	0	0	0.0	0	0
55 - 60	19.4	5	201	-89,398	10	197	12,439.5	0	0	0.0	0	0
60 - 65	21.0	6	237	-96,848	11	211	13,476.1	0	0	0.0	0	0
65 - 70	22.6	3	129	-104,298	4	73	14,512.7	0	0	0.0	0	0
70 - 75	24.2	6	256	-111,748	8	149	15,549.3	0	0	0.0	0	0
75 - 80	25.8	4	168	-119,198	5	90	16,586.0	0	0	0.0	0	0
80 - 85	27.5	0	0	-126,647	1	14	17,622.6	0	0	0.0	0	0
85 - 90	29.1	0	0	-134,097	0	0	18,659.2	0	0	0.0	0	0
90 - 95	30.7	0	0	-141,547	0	0	19,695.8	0	0	0.0	0	0
95 - 100	32.3	0	0	-148,997	0	0	20,732.5	100	8,760	0.0	0	0
Hours Off	0.0	0	4,465	0	0	6,808	0.0	0	0	0.0	0	8,760

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-148,997	0.0	-85,375	0.0	-98,538	0.0	-98,889	0.0	-98,856	0.0
2	32.9	30.7	-129,837	0.0	-96,292	0.0	-105,376	0.0	-105,616	0.0	-105,530	0.0
3	33.1	31.3	-117,476	0.0	-104,881	0.0	-111,157	0.0	-111,321	0.0	-111,211	0.0
4	33.9	32.1	-110,610	0.0	-111,197	0.0	-115,540	0.0	-115,653	0.0	-115,534	0.0
5	35.2	33.5	-106,932	0.0	-115,384	0.0	-118,394	0.0	-118,472	0.0	-118,355	0.0
6	37.0	35.4	-104,751	0.0	-117,707	0.0	-119,799	0.0	-119,852	0.0	-119,744	0.0
7	39.0	37.6	-93,415	0.0	-108,686	0.0	-110,599	0.0	-110,635	0.0	-110,081	0.0
8	41.3	40.1	-50,965	0.0	-90,337	0.0	-92,639	0.0	-92,664	0.0	-91,293	0.0
9	43.7	42.5	-2,342	0.0	-49,957	0.0	-61,463	0.0	-61,524	0.0	-52,328	0.0
10	46.1	44.0	0	0.0	0	0.0	-2,983	0.0	-2,983	0.0	0	0.0
11	48.4	45.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	50.5	45.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	52.2	46.1	-936	10.3	0	0.0	0	0.0	0	0.0	0	0.0
14	53.5	46.4	0	12.0	0	0.5	0	0.0	0	0.0	0	0.5
15	54.3	46.3	0	12.4	-917	6.2	-887	5.1	-887	5.1	-917	6.2
16	54.6	46.1	0	11.8	0	5.9	0	5.5	0	5.5	0	5.9
17	54.0	45.9	0	9.9	0	4.7	0	4.3	0	4.3	0	4.7
18	52.5	45.0	0	7.0	0	2.9	0	2.6	0	2.6	0	2.9
19	50.1	44.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	47.1	43.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	43.7	40.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	40.4	37.3	0	0.0	-75,427	0.0	-76,011	0.0	-76,011	0.0	-75,427	0.0
23	37.3	34.9	-13,266	0.0	-82,799	0.0	-83,314	0.0	-83,314	0.0	-82,799	0.0
24	34.9	32.6	-72,231	0.0	-90,772	0.0	-91,219	0.0	-91,219	0.0	-90,772	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-86,027	0.0	-77,889	0.0	-82,641	0.0	-82,773	0.0	-82,740	0.0
2	39.7	37.1	-84,142	0.0	-85,730	0.0	-89,049	0.0	-89,140	0.0	-89,053	0.0
3	37.8	35.1	-84,503	0.0	-93,297	0.0	-95,623	0.0	-95,685	0.0	-95,575	0.0
4	36.3	33.8	-85,964	0.0	-100,238	0.0	-101,875	0.0	-101,917	0.0	-101,798	0.0
5	35.1	32.6	-88,111	0.0	-106,553	0.0	-107,709	0.0	-107,738	0.0	-107,622	0.0
6	34.4	32.0	-90,468	0.0	-112,214	0.0	-113,035	0.0	-113,055	0.0	-112,947	0.0
7	34.1	31.9	-82,264	0.0	-107,356	0.0	-108,398	0.0	-108,412	0.0	-107,858	0.0
8	34.6	32.4	-17,551	0.0	-92,693	0.0	-94,398	0.0	-94,407	0.0	-93,037	0.0
9	36.0	33.8	0	0.0	-58,990	0.0	-69,016	0.0	-69,040	0.0	-59,843	0.0
10	38.2	34.7	0	0.0	-8,412	0.0	-12,406	0.0	-12,406	0.0	-8,412	0.0
11	40.9	36.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	43.9	37.4	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
13	46.9	39.4	0	12.1	0	0.0	0	0.0	0	0.0	0	0.0
14	49.7	41.4	0	13.5	0	0.0	0	0.0	0	0.0	0	0.0
15	51.8	42.8	0	14.0	0	4.7	0	3.1	0	3.1	0	4.7
16	53.2	43.9	0	13.4	0	6.1	0	5.8	0	5.8	0	6.1
17	53.7	44.2	0	11.6	0	5.4	0	5.0	0	5.0	0	5.4
18	53.4	44.4	0	8.9	0	4.0	0	3.7	0	3.7	0	4.0
19	52.7	44.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	51.5	45.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	50.0	44.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	48.1	43.3	0	0.0	-27,293	0.0	-29,655	0.0	-29,655	0.0	-27,293	0.0
23	46.1	41.8	0	0.0	-73,037	0.0	-73,087	0.0	-73,087	0.0	-73,037	0.0
24	43.9	40.1	-44,410	0.0	-77,066	0.0	-77,194	0.0	-77,194	0.0	-77,066	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-51,242	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	48.7	44.6	-41,230	0.0	0	0.0	-58,725	0.0	-60,655	0.0	-60,197	0.0
3	46.6	42.9	-46,926	0.0	-65,658	0.0	-72,517	0.0	-72,517	0.0	-72,494	0.0
4	44.9	41.4	-54,225	0.0	-74,329	0.0	-75,639	0.0	-75,639	0.0	-75,581	0.0
5	43.9	40.8	-58,880	0.0	-78,472	0.0	-79,405	0.0	-79,405	0.0	-79,330	0.0
6	43.5	40.8	-62,895	0.0	-82,398	0.0	-83,066	0.0	-83,066	0.0	-82,986	0.0
7	44.0	41.4	0	0.0	-54,869	0.0	-60,188	0.0	-60,188	0.0	-56,328	0.0
8	45.4	42.7	0	0.0	-8,411	0.0	-12,177	0.0	-12,177	0.0	-8,411	0.0
9	47.7	44.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	50.6	45.8	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
11	53.9	47.4	-788	12.2	0	0.0	0	0.0	0	0.0	0	0.0
12	57.4	49.0	0	15.3	0	3.5	0	2.2	0	2.2	0	3.5
13	60.7	50.8	0	17.6	0	10.1	0	9.8	0	9.8	0	10.1
14	63.6	52.7	0	19.2	0	11.3	0	10.9	0	10.9	0	11.3
15	65.9	53.7	0	19.7	0	11.6	0	11.2	0	11.2	0	11.6
16	67.3	54.4	0	19.0	0	11.5	0	11.2	0	11.2	0	11.5
17	67.8	54.6	0	17.3	0	10.7	0	10.4	0	10.3	0	10.7
18	67.4	54.8	0	14.3	0	9.4	0	9.0	0	9.0	0	9.4
19	66.4	55.2	0	4.4	0	1.1	0	1.0	0	1.0	0	1.1
20	64.7	56.0	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.2	49.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	-1,261	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	-7,377	0.0	-33,519	0.0	-34,249	0.0	-33,451	0.0
6	53.5	50.9	-22,565	0.0	-59,610	0.0	-59,706	0.0	-59,706	0.0	-59,610	0.0
7	53.2	51.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	53.9	51.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	55.9	52.1	0	2.6	0	0.0	0	0.0	0	0.0	0	0.0
10	58.9	53.2	0	13.2	0	0.0	0	0.0	0	0.0	0	0.0
11	62.6	55.2	0	16.8	-886	10.7	-827	9.2	-827	9.1	-886	11.1
12	66.5	57.3	0	19.8	0	13.1	0	12.6	0	12.5	0	13.3
13	70.2	59.6	0	22.0	0	14.6	0	13.9	0	13.9	0	14.6
14	73.2	61.0	0	23.5	0	15.8	0	15.1	0	15.1	0	15.8
15	75.2	62.2	0	23.8	0	16.3	0	15.6	0	15.6	0	16.3
16	75.9	62.2	0	23.0	0	15.9	0	15.2	0	15.2	0	15.9
17	75.6	62.0	0	21.1	0	14.9	0	14.2	0	14.2	0	14.9
18	74.9	61.7	0	18.3	0	13.4	0	12.7	0	12.7	0	13.4
19	73.7	62.0	0	8.3	0	4.7	0	4.5	0	4.5	0	4.7
20	72.1	62.4	0	5.1	0	2.5	0	2.4	0	2.4	0	2.5
21	70.2	63.3	0	3.3	0	1.1	0	1.0	0	1.0	0	1.1
22	68.0	62.5	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

May	----- Design -----					----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	68.2	63.5		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
2	65.7	61.5		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
3	63.6	59.7		0	0.2		0	0.0		0	0.0		0	0.0		0	0.0
4	61.8	58.4		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
5	60.5	57.1		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
6	59.7	56.5		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
7	59.4	56.5		0	4.2		-1,287	0.0		-1,272	0.0		-1,272	0.0		-1,287	0.0
8	60.1	56.3		0	9.9		0	0.0		0	0.0		0	0.0		0	0.0
9	62.4	56.3		0	13.6		0	2.9		0	1.8		0	1.8		0	3.1
10	65.7	57.2		0	17.2		0	11.1		0	11.1		0	11.2		0	11.8
11	69.9	58.9		0	20.8		0	13.1		0	13.1		0	13.1		0	13.6
12	74.3	60.9		0	23.8		0	15.4		0	15.2		0	15.2		0	15.7
13	78.5	63.7		0	26.5		0	17.6		0	17.3		0	17.3		0	17.7
14	81.9	65.3		0	27.8		0	19.4		0	18.9		0	18.9		0	19.4
15	84.1	66.9		0	28.3		0	20.5		0	19.8		0	19.8		0	20.5
16	84.9	67.1		0	27.6		0	20.3		0	19.6		0	19.6		0	20.3
17	84.6	67.3		0	25.7		0	19.4		0	18.7		0	18.7		0	19.4
18	83.8	67.1		0	22.8		0	18.1		0	17.4		0	17.4		0	18.1
19	82.4	67.5		0	12.7		0	9.0		0	8.8		0	8.8		0	9.0
20	80.6	68.9		0	8.9		0	6.3		0	6.2		0	6.2		0	6.3
21	78.5	71.0		0	6.5		0	4.6		0	4.5		0	4.5		0	4.6
22	76.1	69.9		0	4.9		0	3.4		0	3.3		0	3.3		0	3.4
23	73.4	68.0		0	3.8		0	1.9		0	1.9		0	1.9		0	1.9
24	70.8	65.5		0	2.5		0	0.6		0	0.5		0	0.5		0	0.6

June			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		6.2		0		2.3		0		2.7		0		2.8
2	72.6	68.4		0		5.0		0		1.2		0		1.4		0		1.4
3	70.9	67.3		0		4.3		0		0.3		0		0.3		0		0.3
4	69.6	66.5		0		3.5		0		0.0		0		0.0		0		0.0
5	68.7	65.8		0		3.0		0		0.0		0		0.0		0		0.0
6	68.5	65.7		0		2.8		0		0.0		0		0.0		0		0.0
7	69.0	66.3		0		12.1		0		5.0		0		4.6		0		5.2
8	70.6	66.9		0		15.3		0		11.7		0		11.4		0		12.0
9	73.0	67.7		0		18.6		0		13.7		0		13.1		0		13.7
10	76.1	68.1		0		22.0		0		16.2		0		15.6		0		16.3
11	79.5	69.1		0		25.4		0		18.7		0		18.1		0		18.7
12	82.9	70.1		0		28.4		0		20.8		0		20.2		0		20.8
13	86.0	71.0		0		30.4		0		22.6		0		22.0		0		22.6
14	88.4	72.5		0		31.8		0		24.3		0		23.7		0		24.3
15	90.0	74.0		0		32.2		0		25.5		0		24.8		0		25.5
16	90.5	73.7		0		31.5		0		25.0		0		24.3		0		25.0
17	90.3	74.2		0		30.1		0		24.2		0		23.5		0		24.2
18	89.4	73.9		0		27.5		0		22.8		0		22.1		0		22.8
19	88.1	74.5		0		17.1		0		13.2		0		13.0		0		13.2
20	86.4	75.3		0		13.1		0		10.0		0		9.9		0		10.0
21	84.3	76.5		0		10.4		0		8.0		0		7.9		0		8.0
22	81.9	75.7		0		8.9		0		6.5		0		6.5		0		6.5
23	79.5	74.0		0		7.8		0		5.5		0		5.5		0		5.5
24	77.0	72.1		0		6.7		0		4.2		0		4.1		0		4.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

July			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5		0	6.4		0	1.6			0	1.9			0	1.9			0	1.9		
2	72.4	69.4		0	5.3		0	0.9			0	1.0			0	1.0			0	1.0		
3	71.3	68.4		0	4.5		0	0.0			0	0.0			0	0.0			0	0.0		
4	70.5	67.7		0	4.0		0	0.0			0	0.0			0	0.0			0	0.0		
5	70.0	67.4		0	3.6		0	0.0			0	0.0			0	0.0			0	0.0		
6	69.9	67.5		0	3.2		0	0.0			0	0.0			0	0.0			0	0.0		
7	70.3	68.0		0	12.5		0	5.4			0	5.1			0	5.1			0	5.7		
8	71.7	69.0		0	15.1		0	12.1			0	11.8			0	11.8			0	12.4		
9	73.7	69.5		0	18.5		0	14.0			0	13.4			0	13.4			0	14.0		
10	76.2	70.6		0	21.6		0	16.8			0	16.1			0	16.1			0	16.8		
11	78.9	71.8		0	24.7		0	19.2			0	18.6			0	18.6			0	19.2		
12	81.4	73.0		0	27.7		0	21.5			0	20.8			0	20.8			0	21.5		
13	83.4	74.4		0	29.8		0	23.4			0	22.7			0	22.7			0	23.4		
14	84.8	74.8		0	31.0		0	24.3			0	23.6			0	23.6			0	24.3		
15	85.2	75.0		0	31.4		0	24.7			0	24.0			0	24.0			0	24.7		
16	85.1	75.0		0	30.7		0	24.1			0	23.4			0	23.4			0	24.1		
17	84.6	74.7		0	29.3		0	23.0			0	22.3			0	22.3			0	23.0		
18	83.8	74.6		0	26.7		0	21.3			0	20.6			0	20.6			0	21.3		
19	82.7	74.6		0	16.3		0	11.6			0	11.4			0	11.4			0	11.6		
20	81.4	74.4		0	12.4		0	8.7			0	8.6			0	8.6			0	8.7		
21	79.9	74.9		0	10.1		0	6.8			0	6.7			0	6.7			0	6.8		
22	78.4	74.0		0	8.8		0	5.4			0	5.4			0	5.4			0	5.4		
23	76.8	72.7		0	7.5		0	4.3			0	4.2			0	4.2			0	4.3		
24	75.2	71.6		0	6.8		0	3.0			0	3.0			0	3.0			0	3.0		

August			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0	6.3		0	2.1			0	2.5			0	2.5			0	2.5		
2	73.2	70.3		0	5.0		0	1.1			0	1.3			0	1.3			0	1.3		
3	71.7	68.9		0	4.2		0	0.2			0	0.2			0	0.2			0	0.2		
4	70.4	67.8		0	3.4		0	0.0			0	0.0			0	0.0			0	0.0		
5	69.5	66.8		0	2.8		0	0.0			0	0.0			0	0.0			0	0.0		
6	68.9	66.4		0	2.8		0	0.0			0	0.0			0	0.0			0	0.0		
7	68.7	66.4		0	11.3		0	3.7			0	3.3			0	3.3			0	3.9		
8	69.2	66.8		0	13.8		0	10.7			0	10.4			0	10.4			0	11.0		
9	70.8	67.7		0	17.3		0	12.6			0	12.1			0	12.1			0	12.7		
10	73.2	67.7		0	20.8		0	15.2			0	14.6			0	14.6			0	15.3		
11	76.2	68.8		0	24.3		0	17.7			0	17.1			0	17.1			0	17.7		
12	79.3	70.3		0	27.3		0	20.2			0	19.5			0	19.5			0	20.2		
13	82.3	72.2		0	29.7		0	22.3			0	21.6			0	21.6			0	22.3		
14	84.7	73.7		0	31.1		0	23.8			0	23.1			0	23.1			0	23.8		
15	86.3	74.6		0	31.2		0	24.6			0	23.9			0	23.9			0	24.6		
16	86.8	75.1		0	30.6		0	24.3			0	23.6			0	23.6			0	24.3		
17	86.6	75.1		0	28.6		0	23.0			0	22.3			0	22.3			0	23.0		
18	86.0	75.3		0	25.7		0	21.6			0	20.9			0	20.9			0	21.6		
19	85.1	76.0		0	15.0		0	11.4			0	11.2			0	11.2			0	11.4		
20	83.8	76.8		0	11.8		0	8.7			0	8.6			0	8.6			0	8.7		
21	82.3	77.2		0	9.9		0	7.3			0	7.3			0	7.3			0	7.3		
22	80.6	76.3		0	8.7		0	6.3			0	6.2			0	6.2			0	6.3		
23	78.7	75.3		0	7.2		0	5.0			0	5.0			0	5.0			0	5.0		
24	76.8	73.7		0	6.4		0	3.6			0	3.6			0	3.6			0	3.6		

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

September			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	69.6	67.4		0	2.9		0	0.0		0	0.0		0	0.0		0	0.0
2	67.6	65.0		0	2.0		0	0.0		0	0.0		0	0.0		0	0.0
3	65.8	63.4		0	1.0		0	0.0		0	0.0		0	0.0		0	0.0
4	64.3	62.2		0	0.4		0	0.0		0	0.0		0	0.0		0	0.0
5	63.1	61.1		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
6	62.4	60.3		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
7	62.2	60.2		0	7.2		-1,121	0.0		-1,105	0.0		-1,105	0.0		-1,120	0.0
8	62.9	60.9		0	9.7		0	0.0		0	0.0		0	0.0		0	0.0
9	64.7	61.8		0	13.3		0	3.7		0	2.4		0	2.4		0	4.1
10	67.6	62.1		0	17.2		0	12.8		0	12.8		0	12.8		0	13.5
11	71.1	63.1		0	20.8		0	14.9		0	14.4		0	14.4		0	15.0
12	74.8	64.6		0	23.6		0	16.3		0	15.7		0	15.7		0	16.3
13	78.3	66.7		0	25.9		0	18.3		0	17.6		0	17.6		0	18.3
14	81.2	68.4		0	27.5		0	19.7		0	19.1		0	19.1		0	19.7
15	83.0	70.0		0	27.7		0	20.6		0	19.9		0	19.9		0	20.6
16	83.7	70.5		0	26.6		0	20.3		0	19.6		0	19.6		0	20.3
17	83.4	70.5		0	24.4		0	19.2		0	18.5		0	18.5		0	19.2
18	82.8	70.9		0	21.1		0	17.2		0	16.6		0	16.6		0	17.2
19	81.6	72.7		0	10.9		0	7.6		0	7.4		0	7.4		0	7.6
20	80.1	74.7		0	8.5		0	6.1		0	6.0		0	6.0		0	6.1
21	78.3	74.1		0	6.9		0	4.8		0	4.7		0	4.7		0	4.8
22	76.3	72.4		0	5.7		0	3.6		0	3.5		0	3.5		0	3.6
23	74.1	70.7		0	4.3		0	2.2		0	2.2		0	2.2		0	2.2
24	71.8	68.9		0	3.2		0	1.0		0	0.9		0	0.9		0	1.0

October			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	52.2	50.5		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
2	50.1	48.6		0	0.0		0	0.0		-60,204	0.0		-62,134	0.0		-61,676	0.0
3	48.4	46.9		0	0.0		-42,940	0.0		-70,835	0.0		-70,835	0.0		-70,813	0.0
4	47.1	45.8		0	0.0		-72,573	0.0		-72,763	0.0		-72,763	0.0		-72,705	0.0
5	46.3	44.8		-15,494	0.0		-75,500	0.0		-75,666	0.0		-75,666	0.0		-75,591	0.0
6	46.0	44.5		-53,113	0.0		-78,492	0.0		-78,634	0.0		-78,634	0.0		-78,554	0.0
7	46.8	45.3		0	0.0		-37,189	0.0		-41,203	0.0		-41,203	0.0		-37,343	0.0
8	48.9	47.5		0	0.0		0	0.0		-1,932	0.0		-1,932	0.0		0	0.0
9	52.2	49.9		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
10	56.2	52.5		0	2.7		0	0.0		0	0.0		0	0.0		0	0.0
11	60.4	54.4		0	14.4		0	0.0		0	0.0		0	0.0		0	0.0
12	64.4	56.0		0	16.8		-824	8.7		0	7.0		0	7.0		-824	8.9
13	67.7	57.3		0	18.3		0	11.8		0	11.2		0	11.1		0	12.0
14	69.8	58.2		0	19.3		0	12.9		0	12.2		0	12.1		0	12.9
15	70.6	58.1		0	19.3		0	13.0		0	12.3		0	12.3		0	13.0
16	70.3	57.5		0	18.1		0	12.3		0	11.7		0	11.7		0	12.3
17	69.5	57.3		0	15.8		0	10.9		0	10.3		0	10.3		0	10.9
18	68.2	57.7		0	12.5		0	8.6		0	8.0		0	8.0		0	8.6
19	66.5	60.6		0	3.8		0	0.4		0	0.4		0	0.4		0	0.4
20	64.4	60.8		0	2.1		0	0.0		0	0.0		0	0.0		0	0.0
21	62.1	59.4		0	0.7		0	0.0		0	0.0		0	0.0		0	0.0
22	59.6	57.3		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
23	57.0	55.1		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
24	54.5	52.7		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	0	0.0	0	0.0	-15,783	0.0	-18,437	0.0	-18,179	0.0
2	49.4	47.3	-24,919	0.0	-11,217	0.0	-68,892	0.0	-68,892	0.0	-68,680	0.0
3	47.2	45.3	-53,067	0.0	-72,280	0.0	-72,302	0.0	-72,302	0.0	-72,280	0.0
4	45.3	43.4	-58,271	0.0	-75,715	0.0	-75,773	0.0	-75,773	0.0	-75,715	0.0
5	43.9	42.2	-62,914	0.0	-79,844	0.0	-79,918	0.0	-79,918	0.0	-79,844	0.0
6	43.0	41.4	-66,812	0.0	-84,042	0.0	-84,121	0.0	-84,121	0.0	-84,042	0.0
7	42.7	41.2	0	0.0	-62,207	0.0	-66,066	0.0	-66,066	0.0	-62,207	0.0
8	43.5	42.0	0	0.0	-20,078	0.0	-23,845	0.0	-23,845	0.0	-20,078	0.0
9	45.9	44.0	0	0.0	0	0.0	-1,995	0.0	-1,995	0.0	0	0.0
10	49.4	46.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	53.8	48.6	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
12	58.4	50.6	0	13.4	0	0.0	0	0.0	0	0.0	0	0.0
13	62.8	52.6	0	15.6	-810	6.7	0	5.3	0	5.3	-810	6.7
14	66.3	54.5	0	16.8	0	9.4	0	9.1	0	9.1	0	9.4
15	68.7	55.7	0	16.9	0	10.2	0	9.8	0	9.8	0	10.2
16	69.5	56.1	0	15.7	0	10.0	0	9.5	0	9.5	0	10.1
17	69.2	55.8	0	13.4	0	8.7	0	8.2	0	8.2	0	8.7
18	68.3	57.0	0	10.6	0	7.3	0	6.7	0	6.7	0	7.3
19	66.9	59.4	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5	54.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.7	51.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-14,321	0.0	-59,852	0.0	-75,516	0.0	-75,588	0.0	-75,554	0.0
2	43.2	41.1	-64,906	0.0	-76,270	0.0	-79,938	0.0	-79,987	0.0	-79,901	0.0
3	41.8	39.8	-69,192	0.0	-82,386	0.0	-84,951	0.0	-84,984	0.0	-84,873	0.0
4	40.7	38.7	-70,636	0.0	-88,177	0.0	-89,977	0.0	-90,000	0.0	-89,881	0.0
5	40.1	38.4	-72,340	0.0	-93,487	0.0	-94,755	0.0	-94,771	0.0	-94,655	0.0
6	39.9	38.4	-74,011	0.0	-97,982	0.0	-98,880	0.0	-98,891	0.0	-98,782	0.0
7	40.5	39.0	-20,406	0.0	-91,426	0.0	-92,520	0.0	-92,528	0.0	-91,974	0.0
8	42.2	40.7	0	0.0	-56,064	0.0	-64,373	0.0	-64,391	0.0	-57,424	0.0
9	44.9	43.4	0	0.0	-16,000	0.0	-19,891	0.0	-19,891	0.0	-16,000	0.0
10	48.2	45.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	51.7	48.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12	55.0	50.7	0	6.6	0	0.0	0	0.0	0	0.0	0	0.0
13	57.7	52.0	0	12.1	0	0.0	0	0.0	0	0.0	0	0.0
14	59.5	52.6	0	13.4	-951	7.1	-784	5.5	-784	5.5	-951	7.1
15	60.1	52.7	0	13.6	0	7.8	0	7.3	0	7.3	0	7.7
16	59.9	52.6	0	12.7	0	7.4	0	6.9	0	6.9	0	7.4
17	59.2	52.1	0	10.6	0	5.9	0	5.4	0	5.4	0	5.9
18	58.2	51.8	0	8.0	0	4.5	0	3.9	0	3.9	0	4.4
19	56.8	52.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	55.0	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	53.1	50.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	51.0	48.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	48.9	46.2	0	0.0	-55,969	0.0	-58,592	0.0	-58,592	0.0	-55,969	0.0
24	46.9	44.1	0	0.0	-72,241	0.0	-72,282	0.0	-72,282	0.0	-72,241	0.0

BUILDING TEMPERATURE PROFILES - ALTERNATIVE 1

----- B U I L D I N G T E M P E R A T U R E P R O F I L E S -----

Temperature	----- Room Number -----
Range	1
(F)	

Max. Temp.	75.0
Mo./Hr.	1 13
Day Type	1

 Number of Hours
Above 100	0
95 - 100	0
90 - 95	0
85 - 90	0
80 - 85	0
75 - 80	0
70 - 75	8,746
65 - 70	14
60 - 65	0
55 - 60	0
50 - 55	0
Below 50	0

Min. Temp.	69.1
Mo./Hr.	1 1
Day Type	1

01 Card - Job Information

Project: ENERGY STUDY OF COOLING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORPS OF ENGINEERS
 Program User: MCGINNIS
 Comments: BUILDING 29610 (1 BUILDING)

-----CARD 08-- Climatic Information -----

Weather	Summer Clearness	Winter Clearness	Summer Design	Summer Design	Winter Design	Building	Summer Ground	Winter Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating	Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	RA Load
Method	Method	Method	Units	Units	to Room
CLTD-CLF	TETD-TA1	OA HIGH	ACTUAL	ACTUAL	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	BUILDING 29610

-----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	1180	10	2	0		13			

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor	
1		50		CL6CONST			HTGCONST			LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Roof	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Equal to Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				179			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Constuc	Type	Direction	Tilt	Alpha	Reflectance Multiplier
1	1	51	13.5		181	0				
1	2	14	13.5		181	90				
1	3	37	13.5		181	0				
1	4	14	13.5		181	90				
1	5	83	13.5		181	0				
1	6	40	13.5		181	90				
1	7	65	13.5		181	180				
1	8	16	13.5		181	90				
1	9	57	13.5		181	180				
1	10	35.25	13.5		181	90				
1	11	51.25	13.5		181	180				
1	12	117	13.5		181	270				

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of	U-Value	Coefficient	Shading	Shading	Solar to	Visible	Visible
				Windows			Type	Type	Ret. Air	Transmittance	Reflectance
1	5	3	6.5	18	1.03	.87					
1	7	3	6.5	8	1.03	.87					
1	9	3	6.5	1	1.03	.87					
1	12	3	4.5	8	1.03	.87					

-----CARD 26-- Schedules -----

Room	People	Lights	Ventilation	Infiltration	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	TYPE1A	TYPE1B	TYPE1C	TYPE1C	Minimum	Fans	Fan	Fan	Exhaust	Controls
1	TYPE1A	TYPE1B	TYPE1C	TYPE1C						

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	35	PEOPLE	255	255	7200	WATTS	SUSFLUOR				

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	20	KW	TYPE1B						

CHMS 17 Ventilation-----					-----Infiltration-----					
Room Number	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		--Reheat Minimum--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

		-----Main-----				-----Auxiliary-----					
Room Number	---Cooling---		---Heating---		---Cooling---		---Heating---		--Room Exhaust--		
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	
1	1	CFM-SF	1	CFM-SF							

-----OPTIONAL VENTILATION SYSTEM-----							
System		Ventil					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure
1	SZ						

[illegible]

-----CARD 42--- Fan SP and Duct Parameters-----

System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path

1

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
TYPE1A FT GORDON- PEOPLE
TYPE1B FT GORDON-LIGHTS
TYPE1C FT GORDON-VENT./INFIL.

System:

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: TYPE1A
Project: FT GORDON
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments: BN HQ & CLASSROOM- TYPE 1A

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0	0
6	100
18	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0	0
6	100
18	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0	0
6	50
18	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0	0
24	

Schedule Name: TYPE1B
Project: FT GORDON
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments: BN HQ & CLASSROOM- LIGHTS

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour	Util Percent
0	0
6	100
18	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util Percent
0	0
6	100
18	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	0
6	100
18	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: TYPE1C
Project: FT GORDON
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments: BN HQ & CLASSROOM- VENTILLATIO

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 100
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 100
24

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

```
*****  
*****  
**                                     **  
**          TRACE    6 0 0    ANALYSIS          **  
**                                     **  
**          by          **  
**                                     **  
*****  
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ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORPS OF ENGINEERS
MCGINNIS
BUILDING 21606 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 18:59:53 8/12/94
Dataset Name: FGTYP52 .TM

AIRFLOW - ALTERNATIVE 1
ENLISTED SERVICE CLUB

----- S Y S T E M S U M M A R Y -----
(Design Airflow Quantities)

System Number	System Type	Outside Airflow (Cfm)	Cooling Airflow (Cfm)	Main Heating Airflow (Cfm)	Return Airflow (Cfm)	Exhaust Airflow (Cfm)	Auxil. Supply Airflow (Cfm)	Room Exhaust Airflow (Cfm)
1	MZ	1,035	9,604	9,604	9,831	1,263	0	0
2	MZ	6,270	20,809	20,809	21,187	6,648	0	0
Totals		7,305	30,413	30,413	31,018	7,911	0	0

CAPACITY - ALTERNATIVE 1
ENLISTED SERVICE CLUB

----- S Y S T E M S U M M A R Y -----
(Design Capacity Quantities)

System Number	System Type	Cooling				Heating						
		Main Sys. Capacity (Tons)	Aux. Sys. Capacity (Tons)	Opt. Vent Capacity (Tons)	Cooling Totals (Tons)	Main Sys. Capacity (Btuh)	Aux. Sys. Capacity (Btuh)	Preheat Capacity (Btuh)	Reheat Capacity (Btuh)	Humidif. Capacity (Btuh)	Opt. Vent Capacity (Btuh)	Heating Totals (Btuh)
1	MZ	22.2	0.0	0.0	22.2	-102,312	0	0	0	0	0	-102,312
2	MZ	88.0	0.0	0.0	88.0	-134,110	0	-12,907	0	0	0	-147,017
Totals		110.2	0.0	0.0	110.2	-236,422	0	-12,907	0	0	0	-249,329

The building peaked at hour 16 month 8 with a capacity of 109.6 tons

ENGINEERING CHECKS - ALTERNATIVE 1
ENLISTED SERVICE CLUB

----- E N G I N E E R I N G C H E C K S -----

System Number	Main/Auxiliary	System Type	Percent Outside Air	Cooling				Heating		Floor Area Sq Ft
				Cfm/ Sq Ft	Cfm/ Ton	Sq Ft /Ton	Btuh/ Sq Ft	Cfm/ Sq Ft	Btuh/ Sq Ft	
1	Main	MZ	10.78	1.07	432.9	404.6	29.66	1.07	-11.40	8,976
2	Main	MZ	30.13	2.13	236.5	111.3	107.85	2.13	-15.01	9,792

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==>					Mo/Hr: 6/16	*	Mo/Hr: 6/16	*	Mo/Hr: 13/ 1				
Outside Air ==>					OADB/WB/HR: 100/ 75/ 91.0	*	OADB: 100	*	OADB: 23				
					*		*						
	Space	Ret. Air	Ret. Air	Net	Perct	*	Space	Perct	*	Space Peak	Coil Peak	Perct	
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot	
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)	
Envelope Loads						*			*				
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00	
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00	
Roof Cond	50,303	0		50,303	18.89	*	50,303	26.10	*	-26,139	-26,139	25.55	
Glass Solar	20,119	0		20,119	7.56	*	20,119	10.44	*	0	0	0.00	
Glass Cond	15,241	0		15,241	5.72	*	15,241	7.91	*	-32,889	-32,889	32.15	
Wall Cond	38,667	0		38,667	14.52	*	38,667	20.06	*	-43,284	-43,284	42.31	
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00	
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00	
Infiltration	10,331			10,331	3.88	*	6,241	3.24	*	0	0	0.00	
Sub Total==>	134,662	0		134,662	50.58	*	130,571	67.74	*	-102,312	-102,312	100.00	
Internal Loads						*			*				
Lights	45,830	0		45,830	17.21	*	45,830	23.78	*	0	0	0.00	
People	38,788			38,788	14.57	*	16,363	8.49	*	0	0	0.00	
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00	
Sub Total==>	84,618	0	0	84,618	31.78	*	62,193	32.26	*	0	0	0.00	
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00	
Outside Air	0	0	0	46,949	17.63	*	0	0.00	*	0	0	0.00	
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00	
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00	
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00	
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00	
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00	
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00	
						*			*				
Grand Total==>	219,280	0	0	266,229	100.00	*	192,765	100.00	*	-102,312	-102,312	100.00	

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR	Leaving DB/WB/HR	Gross Total	Glass (sf)	(%)				
				Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	8,976	
Main Clg	22.2	266.2	221.1	9,604	77.7	64.0	68.0	56.9	54.9	61.3	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	8,976
Totals	22.2	266.2									Wall	2,847

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----					--ENGINEERING CHECKS--			--TEMPERATURES (F)---		
	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating	Clg % OA	10.8	Type	Clg	Htg			
Main Htg	-102.3	9,604	68.0	77.6	Vent	1,035	0	Clg Cfm/Saft	1.07	SADB	56.9	77.6			
Aux Htg	0.0	0	0.0	0.0	Infil	228	0	Clg Cfm/Ton	432.88	Plenum	75.0	68.0			
Preheat	-0.0	9,604	63.2	56.9	Supply	9,604	9,604	Clg Saft/Ton	404.58	Return	75.0	68.0			
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Saft	29.66	Ret/OA	77.7	68.0			
Humidif	0.0	0	0.0	0.0	Return	9,604	9,604	No. People	69	Runarnd	75.0	68.0			
Opt Vent	0.0	0	0.0	0.0	Exhaust	1,035	0	Htg % OA	0.0	Fn MtrTD	0.0	0.0			
Total	-102.3				Rm Exh	0	0	Htg Cfm/SqFt	1.07	Fn BldTD	0.0	0.0			
					Auxil	0	0	Htg Btuh/SqFt	-11.40	Fn Frict	0.0	0.0			

System 2 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==>		Mo/Hr: 8/15		*	Mo/Hr: 9/16		*	Mo/Hr: 13/ 1		
Outside Air ==>		OADB/WB/HR: 97/ 76/105.0		*	OADB: 93		*	OADB: 23		
				*			*			
	Space	Ret. Air	Ret. Air	Net	Perct	Space	Perct	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	Sensible	Of Tot	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	(Btuh)	(%)	(Btuh)	(Btuh)	(%)
Envelope Loads										
Skylite Solr	0	0		0	0.00	0	0.00	0	0	0.00
Skylite Cond	0	0		0	0.00	0	0.00	0	0	0.00
Roof Cond	51,961	0		51,961	4.92	42,203	9.14	-28,515	-28,515	21.26
Glass Solar	19,845	0		19,845	1.88	26,325	5.70	0	0	0.00
Glass Cond	8,134	0		8,134	0.77	6,674	1.45	-20,524	-20,524	15.30
Wall Cond	93,578	0		93,578	8.86	103,976	22.52	-85,071	-85,071	63.43
Partition	0			0	0.00	0	0.00	0	0	0.00
Exposed Floor	0			0	0.00	0	0.00	0	0	0.00
Infiltration	13,991			13,991	1.32	7,465	1.62	0	0	0.00
Sub Total==>	187,510	0		187,510	17.76	186,643	40.42	-134,110	-134,110	100.00
Internal Loads										
Lights	114,965	0		114,965	10.89	117,639	25.48	0	0	0.00
People	521,497			521,497	49.38	157,440	34.10	0	0	0.00
Misc	0	0	0	0	0.00	0	0.00	0	0	0.00
Sub Total==>	636,462	0	0	636,462	60.27	275,078	59.58	0	0	0.00
Ceiling Load	0	0		0	0.00	0	0.00	0	0	0.00
Outside Air	0	0	0	232,067	21.98	0	0.00	0	0	0.00
Sup. Fan Heat				0	0.00		0.00		0	0.00
Ret. Fan Heat		0		0	0.00		0.00		0	0.00
Duct Heat Pkup		0		0	0.00		0.00		0	0.00
OV/UNDR Sizing	0			0	0.00	0	0.00	0	0	0.00
Exhaust Heat		0	0	0	0.00		0.00		0	0.00
Terminal Bypass		0	0	0	-0.00		0.00		0	0.00
Grand Total==>	823,972	0	0	1,056,039	100.00	461,721	100.00	-134,110	-134,110	100.00

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR	Leaving DB/WB/HR	Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(cfm)	Deg F Deg F Grains	Deg F Deg F Grains	Floor		
Main Clg	88.0	1,056.0	20,809	81.5 69.9 91.9	55.0 54.2 61.8	Part	9,792	
Aux Clg	0.0	0.0	0	0.0 0.0 0.0	0.0 0.0 0.0	ExFlr	0	
Opt Vent	0.0	0.0	0	0.0 0.0 0.0	0.0 0.0 0.0	Roof	9,792	0 0
Totals	88.0	1,056.0				Wall	4,725	405 9

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	30.1	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F				Clg Cfm/Sqft	2.13	SADB	55.0	73.8
Main Htg	-134.1	20,809	68.0	73.8	Vent	6,270	0	Clg Cfm/Ton	236.46	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	20,809	20,809	Clg Sqft/Ton	111.27	Return	75.0	68.0
Preheat	-12.9	20,809	54.4	55.0	Mincfm	0	0	Clg Btuh/Sqft	107.85	Ret/OA	81.5	68.0
Reheat	0.0	0	0.0	0.0	Return	20,809	20,809	No. People	418	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	6,270	0	Htg % OA	0.0	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	2.13	Fn BldTD	0.0	0.0
Total	-147.0				Auxil	0	0	Htg Btuh/Sqft	-15.01	Fn Frict	0.0	0.0

-----AIRFLOWS (cfm)-----

-----ENGINEERING CHECKS-----

-----TEMPERATURES (F)-----

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ

January		----- Design -----			----- Weekday -----			----- Saturday-----		----- Sunday -----			----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton
1	33.4	31.1	-211,403	0.0	-220,855	0.0		-225,027	0.0	-226,868	0.0		-226,799	0.0
2	32.9	30.7	-212,776	0.0	-226,153	0.0		-235,203	0.0	-241,228	0.0		-240,752	0.0
3	33.1	31.3	-214,396	0.0	-228,862	0.0		-243,232	0.0	-244,454	0.0		-244,232	0.0
4	33.9	32.1	-215,732	0.0	-240,157	0.0		-243,468	0.0	-244,434	0.0		-244,155	0.0
5	35.2	33.5	-216,445	0.0	-239,899	0.0		-241,975	0.0	-242,739	0.0		-242,433	0.0
6	37.0	35.4	-214,903	0.0	-237,076	0.0		-238,791	0.0	-239,395	0.0		-239,083	0.0
7	39.0	37.6	-208,802	0.0	-230,959	0.0		-232,585	0.0	-233,019	0.0		-232,363	0.0
8	41.3	40.1	-197,530	0.0	-207,216	0.0		-222,256	0.0	-222,598	0.0		-209,371	0.0
9	43.7	42.5	-183,812	0.0	-196,191	0.0		-198,850	0.0	-199,119	0.0		-197,059	0.0
10	46.1	44.0	-141,789	0.0	-184,618	0.0		-187,776	0.0	-187,988	0.0		-185,300	0.0
11	48.4	45.0	-40,861	7.3	-172,591	0.0		-176,204	0.0	-176,370	0.0		-173,127	1.6
12	50.5	45.6	0	28.1	-105,767	2.5		-164,987	0.0	-165,118	0.0		-118,985	0.0
13	52.2	46.1	0	31.1	-40,800	22.9		-104,896	0.0	-106,801	0.0		-44,045	21.8
14	53.5	46.4	0	35.5	-23,807	21.8		-48,367	4.0	-49,522	3.6		-24,067	21.9
15	54.3	46.3	0	37.1	-12,504	24.3		-22,804	10.0	-22,867	10.0		-12,709	24.3
16	54.6	46.1	0	39.8	-9,315	24.2		-16,536	9.9	-16,586	9.9		-9,315	24.2
17	54.0	45.9	0	37.3	-12,287	23.8		-20,376	9.5	-20,415	9.5		-12,287	23.8
18	52.5	45.0	0	31.5	-21,370	21.3		-36,204	7.7	-36,235	7.7		-21,370	21.3
19	50.1	44.8	-1,305	1.3	-75,217	0.0		-85,485	0.0	-85,510	0.0		-75,350	0.0
20	47.1	43.3	-32,555	0.0	-127,077	0.0		-142,428	0.0	-142,444	0.0		-127,182	0.0
21	43.7	40.4	-68,276	0.0	-173,714	0.6		-179,983	0.0	-180,001	0.0		-173,775	0.6
22	40.4	37.3	-116,041	0.0	-191,890	0.0		-194,810	0.0	-194,825	0.0		-191,970	0.0
23	37.3	34.9	-156,147	0.0	-205,841	0.0		-208,396	0.0	-208,407	0.0		-205,904	0.0
24	34.9	32.6	-172,993	0.0	-216,983	0.0		-219,201	0.0	-219,210	0.0		-217,032	0.0

February		----- Design -----			----- Weekday -----			----- Saturday-----		----- Sunday -----			----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton
1	41.7	38.6	-182,374	0.0	-190,684	0.0		-197,805	0.0	-200,408	0.0		-200,344	0.0
2	39.7	37.1	-188,754	0.0	-201,776	0.0		-207,515	0.0	-209,561	0.0		-209,371	0.0
3	37.8	35.1	-194,337	0.0	-211,862	0.0		-216,489	0.0	-218,098	0.0		-217,834	0.0
4	36.3	33.8	-199,137	0.0	-219,986	0.0		-223,718	0.0	-224,983	0.0		-224,681	0.0
5	35.1	32.6	-202,261	0.0	-229,013	0.0		-239,877	0.0	-242,007	0.0		-240,890	0.0
6	34.4	32.0	-203,237	0.0	-243,216	0.0		-245,691	0.0	-246,515	0.0		-246,206	0.0
7	34.1	31.9	-199,160	0.0	-244,680	0.0		-247,002	0.0	-247,616	0.0		-246,962	0.0
8	34.6	32.4	-189,331	0.0	-239,294	0.0		-241,975	0.0	-242,459	0.0		-241,088	0.0
9	36.0	33.8	-177,041	0.0	-217,999	0.0		-233,995	0.0	-234,375	0.0		-219,409	0.0
10	38.2	34.7	-121,955	0.0	-206,366	0.0		-209,863	0.0	-210,162	0.0		-207,475	0.0
11	40.9	36.2	-30,154	11.3	-192,478	0.0		-196,358	0.0	-196,593	0.0		-193,350	0.0
12	43.9	37.4	0	25.3	-175,418	0.0		-181,842	0.0	-182,026	0.0		-175,897	0.8
13	46.9	39.4	0	28.9	-127,111	6.3		-167,081	0.3	-167,199	0.4		-133,005	5.1
14	49.7	41.4	0	32.6	-54,316	19.1		-130,400	0.0	-131,325	0.0		-54,948	19.3
15	51.8	42.8	0	37.9	-31,063	20.0		-60,888	3.5	-61,538	3.4		-31,559	20.0
16	53.2	43.9	0	39.7	-16,898	20.8		-28,792	7.7	-28,878	7.8		-16,898	20.8
17	53.7	44.2	0	37.6	-14,598	20.7		-21,446	7.5	-21,446	7.5		-14,598	20.7
18	53.4	44.4	0	31.1	-16,892	19.7		-24,492	6.7	-24,492	6.7		-16,892	19.7
19	52.7	44.4	-3,075	2.5	-40,647	0.0		-48,863	0.0	-48,912	0.0		-40,647	0.0
20	51.5	45.2	-31,826	0.0	-66,948	0.0		-83,129	0.0	-83,167	0.0		-67,246	0.0
21	50.0	44.6	-60,906	0.0	-104,684	0.0		-121,956	0.0	-121,986	0.0		-104,919	0.0
22	48.1	43.3	-105,237	0.0	-147,506	0.0		-164,049	0.0	-164,073	0.0		-147,691	0.0
23	46.1	41.8	-144,328	0.0	-175,744	0.0		-179,532	0.0	-179,551	0.0		-175,889	0.0
24	43.9	40.1	-167,955	0.0	-187,064	0.0		-190,252	0.0	-190,267	0.0		-187,178	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-92,002	0.0	-107,816	0.0	-120,673	0.0	-128,884	0.0	-127,806	0.0
2	48.7	44.6	-112,726	0.0	-157,049	0.0	-162,534	0.0	-163,534	0.0	-163,334	0.0
3	46.6	42.9	-130,436	0.0	-170,414	0.0	-174,841	0.0	-175,627	0.0	-175,355	0.0
4	44.9	41.4	-147,095	0.0	-181,370	0.0	-184,945	0.0	-185,563	0.0	-185,256	0.0
5	43.9	40.8	-156,036	0.0	-189,107	0.0	-191,994	0.0	-192,481	0.0	-192,162	0.0
6	43.5	40.8	-155,775	0.0	-194,346	0.0	-196,679	0.0	-197,061	0.0	-196,748	0.0
7	44.0	41.4	-125,851	0.0	-193,287	0.0	-195,533	0.0	-195,833	0.0	-195,175	0.0
8	45.4	42.7	-62,625	0.0	-185,727	0.0	-188,348	0.0	-188,584	0.0	-187,211	0.0
9	47.7	44.3	-5,159	0.0	-174,474	0.0	-177,516	0.0	-177,702	0.0	-175,641	0.0
10	50.6	45.8	0	27.1	-113,767	0.0	-157,748	0.0	-158,956	0.0	-116,653	0.0
11	53.9	47.4	0	32.3	-32,679	15.8	-77,096	0.0	-77,958	0.0	-34,341	15.1
12	57.4	49.0	0	40.3	0	21.4	-2,586	1.0	-2,878	0.8	0	21.5
13	60.7	50.8	0	52.1	0	28.0	0	13.2	0	13.2	0	27.9
14	63.6	52.7	0	58.2	0	32.0	0	16.6	0	16.6	0	32.1
15	65.9	53.7	0	60.3	0	38.6	0	18.9	0	18.9	0	38.3
16	67.3	54.4	0	60.7	0	42.2	0	24.5	0	24.4	0	42.2
17	67.8	54.6	0	55.9	0	42.3	0	25.2	0	25.2	0	42.3
18	67.4	54.8	0	50.8	0	40.6	0	23.6	0	23.6	0	40.6
19	66.4	55.2	0	18.3	0	11.1	0	5.4	0	5.4	0	11.1
20	64.7	56.0	0	7.0	0	2.7	0	0.0	0	0.0	0	2.7
21	62.5	56.0	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.0	-22,646	0.0	-31,886	0.0	-31,886	0.0	-22,646	0.0
24	54.2	49.4	-27,176	0.0	-66,290	0.0	-75,064	0.0	-75,064	0.0	-66,290	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	-904	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	-11,483	0.0	-23,217	0.0	-27,481	0.0	-24,671	0.0
3	57.0	53.5	0	0.0	-48,299	0.0	-57,604	0.0	-60,304	0.0	-56,931	0.0
4	55.4	52.4	-5,606	0.0	-77,146	0.0	-85,238	0.0	-87,304	0.0	-83,445	0.0
5	54.2	51.4	-17,369	0.0	-108,018	0.0	-116,350	0.0	-117,685	0.0	-114,064	0.0
6	53.5	50.9	-19,415	0.0	-130,880	0.0	-137,507	0.0	-138,390	0.0	-135,104	0.0
7	53.2	51.1	-3,238	0.0	-124,844	0.0	-135,408	0.0	-135,997	0.0	-127,784	0.0
8	53.9	51.5	-1,875	0.0	-83,351	0.0	-102,874	0.0	-103,271	0.0	-85,503	0.0
9	55.9	52.1	-718	28.1	-26,901	0.0	-54,617	0.0	-54,887	0.0	-28,498	0.0
10	58.9	53.2	0	38.0	0	22.6	-1,716	0.0	-1,737	0.0	-672	22.4
11	62.6	55.2	0	56.1	0	29.0	0	9.4	0	9.3	0	29.1
12	66.5	57.3	0	64.6	0	36.1	0	20.6	0	20.6	0	36.1
13	70.2	59.6	0	70.6	0	47.9	0	26.4	0	26.4	0	47.5
14	73.2	61.0	0	74.6	0	55.3	0	37.1	0	37.1	0	55.3
15	75.2	62.2	0	76.8	0	58.6	0	40.4	0	40.4	0	58.6
16	75.9	62.2	0	74.3	0	59.6	0	41.2	0	41.2	0	59.6
17	75.6	62.0	0	71.9	0	59.2	0	40.7	0	40.7	0	59.2
18	74.9	61.7	0	65.4	0	57.4	0	38.9	0	38.9	0	57.4
19	73.7	62.0	0	30.9	0	24.2	0	17.3	0	17.3	0	24.2
20	72.1	62.4	0	18.1	0	13.8	0	10.2	0	10.2	0	13.8
21	70.2	63.3	0	11.1	0	7.9	0	5.3	0	5.3	0	7.9
22	68.0	62.5	0	6.1	0	2.6	0	0.3	0	0.3	0	2.6
23	65.7	60.5	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ

May Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	-1,400	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	65.7	61.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.0	-18,236	0.0	-23,196	0.0	-23,196	0.0	-18,236	0.0
6	59.7	56.5	0	0.0	-40,289	0.0	-44,288	0.0	-44,288	0.0	-40,289	0.0
7	59.4	56.5	0	10.6	-35,522	0.0	-43,517	0.0	-43,517	0.0	-35,522	0.0
8	60.1	56.3	0	42.8	-3,171	0.0	-17,396	0.0	-17,396	0.0	-3,171	0.0
9	62.4	56.3	0	48.3	0	12.1	-1,019	0.0	-1,019	0.0	0	12.1
10	65.7	57.2	0	58.7	0	31.1	0	6.3	0	6.3	0	31.1
11	69.9	58.9	0	66.6	0	42.6	0	25.0	0	25.0	0	42.7
12	74.3	60.9	0	74.6	0	50.4	0	33.0	0	33.0	0	50.4
13	78.5	63.7	0	83.1	0	58.8	0	41.4	0	41.4	0	58.8
14	81.9	65.3	0	85.0	0	67.5	0	49.0	0	49.0	0	67.5
15	84.1	66.9	0	89.7	0	71.4	0	53.1	0	53.1	0	71.4
16	84.9	67.1	0	87.4	0	72.9	0	54.4	0	54.4	0	72.9
17	84.6	67.3	0	84.9	0	73.0	0	54.4	0	54.4	0	73.0
18	83.8	67.1	0	78.2	0	74.2	0	55.0	0	55.0	0	74.2
19	82.4	67.5	0	44.3	0	38.2	0	31.7	0	31.7	0	38.2
20	80.6	68.9	0	30.1	0	28.3	0	25.4	0	25.4	0	28.3
21	78.5	71.0	0	22.8	0	25.7	0	22.6	0	22.6	0	25.7
22	76.1	69.9	0	17.2	0	18.7	0	16.2	0	16.2	0	18.7
23	73.4	68.0	0	12.2	0	11.4	0	9.4	0	9.4	0	11.4
24	70.8	65.5	0	7.9	0	4.4	0	2.7	0	2.7	0	4.4

June Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	20.8	0	11.1	0	10.7	0	10.8	0	12.6
2	72.6	68.4	0	16.5	0	6.0	0	4.8	0	4.8	0	6.1
3	70.9	67.3	0	14.0	0	0.5	0	0.4	0	0.4	0	0.5
4	69.6	66.5	0	12.0	0	0.0	0	0.0	0	0.0	0	0.0
5	68.7	65.8	0	10.5	0	0.0	0	0.0	0	0.0	0	0.0
6	68.5	65.7	0	10.0	0	0.0	0	0.0	0	0.0	0	0.0
7	69.0	66.3	0	47.6	0	12.6	0	0.0	0	0.0	0	12.6
8	70.6	66.9	0	64.9	0	49.3	-782	31.9	-782	31.9	0	49.3
9	73.0	67.7	0	70.7	0	54.3	0	36.6	0	36.6	0	54.3
10	76.1	68.1	0	80.5	0	62.7	0	45.1	0	45.1	0	62.7
11	79.5	69.1	0	87.6	0	69.0	0	51.2	0	51.2	0	69.0
12	82.9	70.1	0	95.4	0	75.7	0	56.9	0	56.9	0	75.7
13	86.0	71.0	0	100.1	0	81.0	0	62.3	0	62.3	0	81.0
14	88.4	72.5	0	103.6	0	88.0	0	68.6	0	68.6	0	88.0
15	90.0	74.0	0	106.2	0	94.2	0	74.5	0	74.5	0	94.2
16	90.5	73.7	0	106.2	0	92.5	0	73.1	0	73.1	0	92.5
17	90.3	74.2	0	104.5	0	95.2	0	75.1	0	75.1	0	95.2
18	89.4	73.9	0	98.6	0	94.3	0	74.2	0	74.2	0	94.3
19	88.1	74.5	0	58.3	0	54.3	0	48.1	0	48.1	0	54.3
20	86.4	75.3	0	43.7	0	43.3	0	40.7	0	40.7	0	43.3
21	84.3	76.5	0	39.1	0	41.1	0	37.9	0	37.9	0	41.1
22	81.9	75.7	0	32.9	0	34.3	0	31.8	0	31.8	0	34.3
23	79.5	74.0	0	28.0	0	27.2	0	25.0	0	25.0	0	27.2
24	77.0	72.1	0	24.2	0	19.2	0	17.4	0	17.4	0	19.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	23.4	0	8.6	0	7.9	0	8.0	0	9.8
2	72.4	69.4	0	18.4	0	4.6	0	3.2	0	3.2	0	4.7
3	71.3	68.4	0	16.4	0	0.2	0	0.0	0	0.0	0	0.2
4	70.5	67.7	0	14.6	0	0.0	0	0.0	0	0.0	0	0.0
5	70.0	67.4	0	13.5	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	12.9	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	50.6	0	20.7	0	5.8	0	5.8	0	20.7
8	71.7	69.0	0	66.7	0	53.2	0	36.6	0	36.6	0	53.3
9	73.7	69.5	0	72.5	0	59.1	0	41.9	0	41.9	0	59.1
10	76.2	70.6	0	81.2	0	68.4	0	48.7	0	48.7	0	68.4
11	78.9	71.8	0	87.7	0	74.8	0	55.5	0	55.5	0	74.8
12	81.4	73.0	0	96.8	0	82.9	0	63.6	0	63.6	0	82.9
13	83.4	74.4	0	101.6	0	88.1	0	68.3	0	68.3	0	88.1
14	84.8	74.8	0	104.6	0	91.0	0	71.2	0	71.2	0	91.0
15	85.2	75.0	0	106.9	0	92.8	0	72.8	0	72.8	0	92.8
16	85.1	75.0	0	106.7	0	93.0	0	72.9	0	72.9	0	93.0
17	84.6	74.7	0	105.6	0	91.9	0	71.6	0	71.6	0	91.9
18	83.8	74.6	0	99.4	0	90.4	0	70.0	0	70.0	0	90.4
19	82.7	74.6	0	58.7	0	50.9	0	44.2	0	44.2	0	50.9
20	81.4	74.4	0	44.3	0	38.9	0	35.9	0	35.9	0	38.9
21	79.9	74.9	0	39.1	0	34.3	0	30.8	0	30.8	0	34.3
22	78.4	74.0	0	33.0	0	26.9	0	24.2	0	24.2	0	26.9
23	76.8	72.7	0	28.9	0	20.2	0	18.0	0	18.0	0	20.2
24	75.2	71.6	0	25.4	0	14.6	0	12.6	0	12.6	0	14.6

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	22.4	0	11.6	0	11.2	0	11.3	0	13.2
2	73.2	70.3	0	17.2	0	7.0	0	5.6	0	5.7	0	7.1
3	71.7	68.9	0	15.1	0	2.1	0	0.4	0	0.4	0	2.1
4	70.4	67.8	0	13.1	0	0.0	0	0.0	0	0.0	0	0.0
5	69.5	66.8	0	11.0	0	0.0	0	0.0	0	0.0	0	0.0
6	68.9	66.4	0	10.7	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	47.1	0	14.0	0	1.2	0	1.2	0	14.0
8	69.2	66.8	0	63.3	0	46.0	-729	27.9	-729	27.9	0	46.0
9	70.8	67.7	0	70.8	0	53.1	0	35.0	0	35.0	0	53.1
10	73.2	67.7	0	80.3	0	59.4	0	41.6	0	41.6	0	59.4
11	76.2	68.8	0	88.2	0	66.1	0	48.1	0	48.1	0	66.1
12	79.3	70.3	0	95.4	0	75.8	0	56.4	0	56.4	0	75.8
13	82.3	72.2	0	103.7	0	84.2	0	64.7	0	64.7	0	84.2
14	84.7	73.7	0	107.5	0	89.0	0	69.2	0	69.2	0	89.0
15	86.3	74.6	0	109.4	0	94.5	0	74.5	0	74.5	0	94.5
16	86.8	75.1	0	109.6	0	96.1	0	76.0	0	76.0	0	96.1
17	86.6	75.1	0	105.1	0	95.0	0	74.8	0	74.8	0	95.0
18	86.0	75.3	0	100.5	0	96.1	0	75.5	0	75.5	0	96.1
19	85.1	76.0	0	58.4	0	53.6	0	47.1	0	47.1	0	53.6
20	83.8	76.8	0	43.9	0	42.6	0	39.6	0	39.6	0	42.6
21	82.3	77.2	0	40.2	0	39.6	0	36.1	0	36.1	0	39.6
22	80.6	76.3	0	32.8	0	32.5	0	30.8	0	30.8	0	33.5
23	78.7	75.3	0	28.0	0	26.4	0	24.0	0	24.0	0	26.4
24	76.8	73.7	0	24.4	0	19.4	0	17.4	0	17.4	0	19.4

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	10.8	0	0.0	0	0.0	0	0.0	0	0.5
2	67.6	65.0	0	6.2	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.0	-698	0.0	-6,012	0.0	-6,012	0.0	-698	0.0
7	62.2	60.2	0	28.1	-3,027	0.0	-9,142	0.0	-9,142	0.0	-3,027	0.0
8	62.9	60.9	0	46.1	-1,386	0.0	-815	0.0	-815	0.0	-1,386	0.0
9	64.7	61.8	0	56.1	0	24.3	-1,239	0.0	-1,239	0.0	0	24.3
10	67.6	62.1	0	68.3	0	39.3	0	18.1	0	18.1	0	39.3
11	71.1	63.1	0	74.3	0	55.0	0	34.3	0	34.3	0	55.0
12	74.8	64.6	0	82.0	0	62.3	0	43.7	0	43.7	0	62.3
13	78.3	66.7	0	90.7	0	67.8	0	49.1	0	49.1	0	67.8
14	81.2	68.4	0	95.1	0	74.9	0	55.9	0	55.9	0	74.9
15	83.0	70.0	0	97.2	0	80.9	0	61.6	0	61.6	0	80.9
16	83.7	70.5	0	96.9	0	82.6	0	63.2	0	63.2	0	82.6
17	83.4	70.5	0	91.4	0	81.8	0	62.3	0	62.3	0	81.8
18	82.8	70.9	0	86.3	0	82.0	0	62.0	0	62.0	0	82.0
19	81.6	72.7	0	46.9	0	42.5	0	36.0	0	36.0	0	42.5
20	80.1	74.7	0	34.3	0	33.7	0	30.5	0	30.5	0	33.7
21	78.3	74.1	0	29.0	0	29.1	0	25.6	0	25.6	0	29.1
22	76.3	72.4	0	22.0	0	21.5	0	18.8	0	18.8	0	21.5
23	74.1	70.7	0	15.8	0	13.8	0	11.5	0	11.5	0	13.8
24	71.8	68.9	0	11.7	0	7.0	0	5.0	0	5.0	0	7.0

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-85,579	0.0	-110,170	0.0	-118,566	0.0	-117,488	0.0
2	50.1	48.6	-26,598	0.0	-135,710	0.0	-154,776	0.0	-160,044	0.0	-157,506	0.0
3	48.4	46.9	-54,133	0.0	-163,254	0.0	-169,853	0.0	-170,639	0.0	-170,367	0.0
4	47.1	45.8	-73,925	0.0	-173,167	0.0	-178,449	0.0	-179,067	0.0	-178,760	0.0
5	46.3	44.8	-94,836	0.0	-180,573	0.0	-184,803	0.0	-185,289	0.0	-184,970	0.0
6	46.0	44.5	-101,990	0.0	-185,755	0.0	-189,144	0.0	-189,526	0.0	-189,213	0.0
7	46.8	45.3	-76,204	0.0	-183,738	0.0	-186,814	0.0	-187,115	0.0	-186,456	0.0
8	48.9	47.5	-16,892	0.0	-173,991	0.0	-177,264	0.0	-177,501	0.0	-176,128	0.0
9	52.2	49.9	0	5.9	-109,271	0.0	-144,831	0.0	-146,066	0.0	-113,874	0.0
10	56.2	52.5	0	34.7	-22,007	8.0	-59,319	0.0	-60,130	0.0	-24,639	6.6
11	60.4	54.4	0	37.7	0	31.0	-1,251	0.0	-1,254	0.0	0	31.3
12	64.4	56.0	0	48.7	0	34.5	0	20.9	0	20.7	0	34.4
13	67.7	57.3	0	60.5	0	40.2	0	23.3	0	23.3	0	40.3
14	69.8	58.2	0	64.5	0	46.0	0	26.5	0	26.5	0	45.3
15	70.6	58.1	0	66.4	0	52.8	0	32.4	0	32.4	0	52.9
16	70.3	57.5	0	66.0	0	49.6	0	32.3	0	32.3	0	49.6
17	69.5	57.3	0	60.5	0	47.7	0	30.0	0	30.0	0	47.7
18	68.2	57.7	0	56.4	0	46.1	0	28.0	0	28.0	0	46.1
19	66.5	60.6	0	22.3	0	12.8	0	6.2	0	6.2	0	12.8
20	64.4	60.8	0	10.0	0	3.2	0	0.0	0	0.0	0	3.2
21	62.1	59.4	0	3.3	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.0	-24,267	0.0	-33,967	0.0	-33,967	0.0	-24,267	0.0
24	54.5	52.7	0	0.0	-63,424	0.0	-72,490	0.0	-72,490	0.0	-63,424	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-62,641	0.0	-101,862	0.0	-113,205	0.0	-121,563	0.0	-120,485	0.0
2	49.4	47.3	-95,040	0.0	-154,152	0.0	-161,939	0.0	-162,940	0.0	-162,740	0.0
3	47.2	45.3	-122,618	0.0	-170,737	0.0	-174,405	0.0	-175,192	0.0	-174,920	0.0
4	45.3	43.4	-144,306	0.0	-181,956	0.0	-184,934	0.0	-185,552	0.0	-185,245	0.0
5	43.9	42.2	-158,041	0.0	-190,609	0.0	-193,027	0.0	-193,513	0.0	-193,195	0.0
6	43.0	41.4	-158,919	0.0	-197,031	0.0	-198,995	0.0	-199,377	0.0	-199,064	0.0
7	42.7	41.2	-129,380	0.0	-198,180	0.0	-200,136	0.0	-200,436	0.0	-199,778	0.0
8	43.5	42.0	-65,722	0.0	-192,463	0.0	-194,856	0.0	-195,092	0.0	-193,720	0.0
9	45.9	44.0	-5,246	0.0	-181,403	1.0	-184,267	0.0	-184,453	0.0	-182,392	1.4
10	49.4	46.6	0	27.9	-139,519	0.0	-169,513	0.0	-169,659	0.0	-142,385	0.0
11	53.8	48.6	0	36.4	-39,200	16.2	-86,700	0.0	-87,792	0.0	-40,875	15.4
12	58.4	50.6	0	44.3	0	25.5	0	1.4	0	1.1	0	25.6
13	62.8	52.6	0	51.9	0	30.8	0	16.6	0	16.6	0	30.8
14	66.3	54.5	0	60.5	0	34.7	0	19.0	0	19.0	0	34.8
15	68.7	55.7	0	61.8	0	39.6	0	23.3	0	23.3	0	39.4
16	69.5	56.1	0	61.3	0	47.0	0	25.1	0	25.0	0	46.9
17	69.2	55.8	0	57.6	0	43.4	0	26.3	0	26.3	0	43.4
18	68.3	57.0	0	51.0	0	41.7	0	24.2	0	24.2	0	41.7
19	66.9	59.4	0	17.8	0	10.9	0	4.6	0	4.6	0	10.9
20	65.0	59.4	0	6.4	0	3.0	0	0.0	0	0.0	0	3.0
21	62.8	58.2	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5	54.0	0	0.0	-18,432	0.0	-28,038	0.0	-28,038	0.0	-18,432	0.0
24	54.7	51.7	-31,609	0.0	-61,127	0.0	-70,134	0.0	-70,134	0.0	-61,127	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-114,096	0.0	-177,240	0.0	-183,369	0.0	-187,301	0.0	-187,267	0.0
2	43.2	41.1	-143,222	0.0	-187,812	0.0	-192,772	0.0	-195,863	0.0	-195,697	0.0
3	41.8	39.8	-165,708	0.0	-196,589	0.0	-200,603	0.0	-203,034	0.0	-202,788	0.0
4	40.7	38.7	-172,434	0.0	-203,806	0.0	-207,056	0.0	-208,967	0.0	-208,680	0.0
5	40.1	38.4	-177,427	0.0	-208,968	0.0	-211,599	0.0	-213,102	0.0	-212,800	0.0
6	39.9	38.4	-179,201	0.0	-212,450	0.0	-214,582	0.0	-215,763	0.0	-215,463	0.0
7	40.5	39.0	-175,982	0.0	-210,072	0.0	-212,160	0.0	-213,089	0.0	-212,441	0.0
8	42.2	40.7	-130,085	0.0	-201,107	0.0	-203,603	0.0	-204,334	0.0	-202,969	0.0
9	44.9	43.4	-65,231	0.0	-189,037	0.0	-191,982	0.0	-192,556	0.0	-190,501	0.0
10	48.2	45.8	-7,841	10.9	-174,615	0.8	-177,998	0.0	-178,449	0.0	-175,766	0.9
11	51.7	48.3	0	29.0	-104,162	0.0	-157,836	0.0	-160,018	0.0	-108,573	0.0
12	55.0	50.7	0	35.5	-22,333	23.4	-68,941	0.0	-70,367	0.0	-24,220	22.3
13	57.7	52.0	0	41.8	0	27.8	-1,367	4.7	-1,586	4.3	0	28.0
14	59.5	52.6	0	42.4	0	31.4	0	16.2	0	16.2	0	31.3
15	60.1	52.7	0	51.3	0	32.6	0	16.4	0	16.4	0	32.6
16	59.9	52.6	0	50.6	0	32.7	0	16.5	0	16.5	0	32.7
17	59.2	52.1	0	47.3	0	31.2	0	15.0	0	15.0	0	31.2
18	58.2	51.8	0	41.0	0	28.5	0	12.0	0	12.0	0	28.1
19	56.8	52.2	0	7.1	0	0.0	-4,410	0.0	-4,410	0.0	0	0.0
20	55.0	51.4	0	0.0	-26,198	0.0	-36,155	0.0	-36,155	0.0	-26,198	0.0
21	53.1	50.1	0	0.0	-56,415	0.0	-76,257	0.0	-76,369	0.0	-56,415	0.0
22	51.0	48.1	-30,511	0.0	-102,013	0.0	-121,290	0.0	-121,377	0.0	-102,013	0.0
23	48.9	46.2	-59,415	0.0	-146,363	0.0	-163,533	0.0	-163,602	0.0	-146,363	0.0
24	46.9	44.1	-92,805	0.0	-172,429	0.0	-177,308	0.0	-177,362	0.0	-172,429	0.0

01 Card - Job Information

Project: ENERGY STUDY OF COOLING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORPS OF ENGINEERS
 Program User: MCGINNIS
 Comments: BUILDING 21606 (1 BUILDING)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR						
	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	ENLISTED SERVICE CLUB

-----CARD 20-- General Room Parameters -----

Zone											
Room	Reference	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Number	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
							Resistance	Height	Multiplier	Zone	
1	1	LOW PORTION	8976		3	0		10.4			

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	HIGH PORTION	9792		3	0		16.5			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				195			
2	1	YES				195			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	44	9.75			270			
1	2	204	9.75			0			
1	3	44	9.75			90			
2	1	48	15.75			90			
2	2	204	15.75			180			
2	3	48	15.75			270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	7.95	10	1	1.03	.7					
1	2	48.7	10	1	1.03	.7					
1	3	3.75	2	11	1.03	.7					
2	1	3.75	2	10	1.03	.7					
2	2	33	10	1	1.03	.7					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	TYPE1A	TYPE1B	TYPE1C	TYPE1C						
2	TYPE1A	TYPE1B	TYPE1C	TYPE1C						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	69	PEOPLE	255	325	1.7	WATT-SF	ASHRAE2				
2	418	PEOPLE	405	875	4	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	10	KW	TYPE1D						
2	1	MISS.	8.8	KW	TYPE1D						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF						
2	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	MZ

-----OPTIONAL VENTILATION SYSTEM-----

-----CARD 41-- Zone Assignment -----

-----CARD 42--- Fan SP and Duct Parameters-----

System	Cool Fan	Heat Fan	Return Fan	Mn Exh Fan	Aux Fan	Rm Exh Fan	Cool Fan Mtr	Return Fan Mtr	Supply Duct Ht Gn	Supply Duct Loc	Return Air Path
Set Number	SP	SP	SP	SP	SP	SP	Loc	Loc			

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
TYPE1A FT GORDON- PEOPLE
TYPE1B FT GORDON-LIGHTS
TYPE1C FT GORDON-VENT./INFIL.
TYPE1D FORT GORDON ENERGY STUDY

System:

MZ MULTIZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: TYPE1A
Project: FT GORDON
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments: BN HQ & CLASSROOM- TYPE 1A

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour	Util Percent
0	0
6	100
18	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util Percent
0	0
6	100
18	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	0
6	50
18	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: TYPE1B
Project: FT GORDON
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments: BN HQ & CLASSROOM- LIGHTS

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour	Util Percent
0	0
6	100
18	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util Percent
0	0
6	100
18	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	0
6	100
18	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: TYPE1C
Project: FT GORDON
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments: BN HQ & CLASSROOM- VENTILLATIO

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour	Util Percent
0	100
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour	Util Percent
0	100
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	100
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: TYPE1D
Project: FORT GORDON ENERGY STUDY
Location: AUGUSTA, GA.
Client: CORP OF ENGINEERS
Program User: BON
Comments: SCHEDULE FOR EQUIPMENT UTILIZA

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		0
24		

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*****>>>*****  
*****>>>*****  
**                                                    **  
**          T R A C E    6 0 0    A N A L Y S I S          **  
**                                                    **  
**          by              **                               **  
**                                                    **  
*****>>>*****  
*****>>>*****
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ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORPS OF ENGINEERS
BON
BUILDING 21714 (9 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 11:43:21 8/15/94
Dataset Name: FGTYPS3A .TM

System 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==> Mo/Hr: 6/17 * Mo/Hr: 6/17 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 98/ 74/ 91.0 * OADB: 98 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	31,432	0		31,432	21.81	*	31,432	29.36	*	-18,041	-18,041	12.39
Glass Solar	24,900	0		24,900	17.27	*	24,900	23.26	*	0	0	0.00
Glass Cond	5,668	0		5,668	3.93	*	5,668	5.29	*	-12,618	-12,618	8.67
Wall Cond	38,849	0		38,849	26.95	*	38,849	36.29	*	-62,436	-62,436	42.89
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	10,519			10,519	7.30	*	6,196	5.79	*	-15,022	-15,022	10.32
Sub Total==>	111,368	0		111,368	77.26	*	107,045	100.00	*	-108,118	-108,118	74.28
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	32,773	22.74	*	0	0.00	*	0	-37,443	25.72
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	111,368	0	0	144,140	100.00	*	107,045	100.00	*	-108,118	-145,561	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Floor		
Main Clg	12.0	144.1	126.3	5,913	77.9	64.2	68.5	58.7	56.3	64.2	Part	4,342
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	4,342
Totals	12.0	144.1									Wall	3,009
												249 8

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA		Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent			Clg Cfm/Sqft		SADB		
Main Htg	-145.6	5,913	62.3	84.5	Infil	241	301	Clg Cfm/Ton	492.29	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	5,913	5,913	Clg Sqft/Ton	361.48	Return	75.0	68.0
Preheat	-0.0	5,913	62.3	58.7	Mincfm	0	0	Clg Btuh/Sqft	33.20	Ret/OA	77.9	62.3
Reheat	0.0	0	0.0	0.0	Return	5,913	5,913	No. People	50	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	750	750	Htg % OA	12.7	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.36	Fn BldTD	0.0	0.0
Total	-145.6				Auxil	0	0	Htg Btuh/SqFt	-33.52	Fn Frict	0.0	0.0

System 2 Block UH - UNIT HEATERS

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==>		Mo/Hr: 0/ 0		*	Mo/Hr: 0/ 0		*	Mo/Hr: 13/ 1		
Outside Air ==>		OADB/WB/HR: 0/ 0/ 0.0		*	OADB: 0		*	OADE: 23		
				*			*			
	Space	Ret. Air	Ret. Air	Net	Perct	Space	Perct	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	Sensible	Of Tot	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	(Btuh)	(%)	(Btuh)	(Btuh)	(%)
Envelope Loads										
Skylite Solr	0	0		0	0.00	0	0.00	0	0	0.00
Skylite Cond	0	0		0	0.00	0	0.00	0	0	0.00
Roof Cond	0	0		0	0.00	0	0.00	-30,431	-30,431	31.25
Glass Solar	0	0		0	0.00	0	0.00	0	0	0.00
Glass Cond	0	0		0	0.00	0	0.00	-14,189	-14,189	14.57
Wall Cond	0	0		0	0.00	0	0.00	-24,806	-24,806	25.47
Partition	0			0	0.00	0	0.00	0	0	0.00
Exposed Floor	0			0	0.00	0	0.00	0	0	0.00
Infiltration	0			0	0.00	0	0.00	-16,730	-16,730	17.18
Sub Total==>	0	0		0	0.00	0	0.00	-86,155	-86,155	88.47
Internal Loads										
Lights	0	0		0	0.00	0	0.00	0	0	0.00
People	0			0	0.00	0	0.00	0	0	0.00
Misc	0	0	0	0	0.00	0	0.00	0	0	0.00
Sub Total==>	0	0	0	0	0.00	0	0.00	0	0	0.00
Ceiling Load	0	0		0	0.00	0	0.00	0	0	0.00
Outside Air	0	0	0	0	0.00	0	0.00	0	-11,233	11.53
Sup. Fan Heat				0	0.00		0.00		0	0.00
Ret. Fan Heat		0		0	0.00		0.00		0	0.00
Duct Heat Pkup		0		0	0.00		0.00		0	0.00
OV/UNDR Sizing	0			0	0.00	0	0.00	0	0	0.00
Exhaust Heat		0	0	0	0.00		0.00		0	0.00
Terminal Bypass		0	0	0	0.00		0.00		0	0.00
Grand Total==>	0	0	0	0	0.00	0	0.00	-86,155	-97,388	100.00

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total		Glass (sf)	(%)
	(Tons)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor			
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Part	7,324	0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Roof	7,324	0	0
Totals	0.0	0.0								Wall	3,351	280	8

-----AREAS-----

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	(Mbh)	(cfm)	Deg F	Deg F	Vent			Clg % OA	0.0	Type	Clg	Htg
Main Htg	-97.4	7,324	66.6	78.6	Infil	0	225	Clg Cfm/Sqft	0.00	SADB	0.0	78.6
Aux Htg	0.0	0	0.0	0.0	Supply	0	7,324	Clg Cfm/Ton	0.00	Plenum	0.0	68.0
Preheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Sqft/Ton	0.00	Return	0.0	68.0
Reheat	0.0	0	0.0	0.0	Return	0	7,324	Clg Btuh/Sqft	0.00	Ret/OA	0.0	66.6
Humidif	0.0	0	0.0	0.0	Exhaust	0	225	No. People	0	Runarnd	0.0	68.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg % OA	3.1	Fn MtrTD	0.0	0.0
Total	-97.4				Auxil	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0
								Htg Btuh/Sqft	-13.30	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-207,681	0.0	-99,924	0.0	-149,506	0.0	-149,506	0.0	-149,506	0.0
2	32.9	30.7	-188,797	0.0	-153,496	0.0	-153,496	0.0	-153,496	0.0	-153,496	0.0
3	33.1	31.3	-155,129	0.0	-159,283	0.0	-159,283	0.0	-159,283	0.0	-159,283	0.0
4	33.9	32.1	-149,463	0.0	-159,906	0.0	-159,906	0.0	-159,906	0.0	-159,906	0.0
5	35.2	33.5	-148,853	0.0	-162,195	0.0	-162,195	0.0	-162,195	0.0	-162,195	0.0
6	37.0	35.4	-144,466	0.0	-160,416	0.0	-160,416	0.0	-160,416	0.0	-160,416	0.0
7	39.0	37.6	-136,929	0.0	-159,403	0.0	-159,403	0.0	-159,403	0.0	-159,403	0.0
8	41.3	40.1	-134,567	0.0	-152,908	0.0	-152,908	0.0	-152,908	0.0	-152,908	0.0
9	43.7	42.5	-120,768	0.0	-142,300	0.0	-142,300	0.0	-142,300	0.0	-142,300	0.0
10	46.1	44.0	-95,393	0.0	-127,560	0.0	-127,560	0.0	-127,560	0.0	-127,560	0.0
11	48.4	45.0	-62,398	0.0	-107,599	0.0	-107,599	0.0	-107,599	0.0	-107,599	0.0
12	50.5	45.6	-45,555	0.0	-89,074	0.0	-89,074	0.0	-89,074	0.0	-89,074	0.0
13	52.2	46.1	-34,696	0.0	-73,632	0.0	-73,632	0.0	-73,632	0.0	-73,632	0.0
14	53.5	46.4	-24,504	0.0	-59,557	0.0	-59,557	0.0	-59,557	0.0	-59,557	0.0
15	54.3	46.3	-15,205	0.0	-50,624	0.0	-50,624	0.0	-50,624	0.0	-50,624	0.0
16	54.6	46.1	-8,737	0.0	-46,712	0.0	-46,712	0.0	-46,712	0.0	-46,712	0.0
17	54.0	45.9	-8,721	0.0	-52,181	0.0	-52,181	0.0	-52,181	0.0	-52,181	0.0
18	52.5	45.0	-20,422	0.0	-65,222	0.0	-65,222	0.0	-65,222	0.0	-65,222	0.0
19	50.1	44.8	-31,208	0.0	-78,751	0.0	-78,751	0.0	-78,751	0.0	-78,751	0.0
20	47.1	43.3	-40,743	0.0	-91,105	0.0	-91,105	0.0	-91,105	0.0	-91,105	0.0
21	43.7	40.4	-46,738	0.0	-103,284	0.0	-103,284	0.0	-103,284	0.0	-103,284	0.0
22	40.4	37.3	-55,009	0.0	-116,962	0.0	-116,962	0.0	-116,962	0.0	-116,962	0.0
23	37.3	34.9	-60,798	0.0	-127,286	0.0	-127,286	0.0	-127,286	0.0	-127,286	0.0
24	34.9	32.6	-65,533	0.0	-137,822	0.0	-137,822	0.0	-137,822	0.0	-137,822	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-100,162	0.0	-78,249	0.0	-122,478	0.0	-122,478	0.0	-122,478	0.0
2	39.7	37.1	-109,751	0.0	-103,033	0.0	-130,446	0.0	-130,446	0.0	-130,446	0.0
3	37.8	35.1	-117,254	0.0	-138,549	0.0	-138,549	0.0	-138,549	0.0	-138,549	0.0
4	36.3	33.8	-123,060	0.0	-144,825	0.0	-144,825	0.0	-144,825	0.0	-144,825	0.0
5	35.1	32.6	-127,938	0.0	-152,761	0.0	-152,761	0.0	-152,761	0.0	-152,761	0.0
6	34.4	32.0	-131,569	0.0	-156,807	0.0	-156,807	0.0	-156,807	0.0	-156,807	0.0
7	34.1	31.9	-132,907	0.0	-162,941	0.0	-162,941	0.0	-162,941	0.0	-162,941	0.0
8	34.6	32.4	-129,253	0.0	-162,993	0.0	-162,993	0.0	-162,993	0.0	-162,993	0.0
9	36.0	33.8	-113,301	0.0	-155,645	0.0	-155,645	0.0	-155,645	0.0	-155,645	0.0
10	38.2	34.7	-86,123	0.0	-141,422	0.0	-141,422	0.0	-141,422	0.0	-141,422	0.0
11	40.9	36.2	-51,679	0.0	-124,859	0.0	-124,859	0.0	-124,859	0.0	-124,859	0.0
12	43.9	37.4	-40,231	0.0	-108,880	0.0	-108,880	0.0	-108,880	0.0	-108,880	0.0
13	46.9	39.4	-29,180	0.0	-87,139	0.0	-87,139	0.0	-87,139	0.0	-87,139	0.0
14	49.7	41.4	-19,582	0.0	-70,601	0.0	-70,601	0.0	-70,601	0.0	-70,601	0.0
15	51.8	42.8	-9,447	0.0	-59,411	0.0	-59,411	0.0	-59,411	0.0	-59,411	0.0
16	53.2	43.9	-1,855	0.0	-53,338	0.0	-53,338	0.0	-53,338	0.0	-53,338	0.0
17	53.7	44.2	0	0.0	-54,909	0.0	-54,909	0.0	-54,909	0.0	-54,909	0.0
18	53.4	44.4	-8,425	0.0	-60,772	0.0	-60,772	0.0	-60,772	0.0	-60,772	0.0
19	52.7	44.4	-22,056	0.0	-74,518	0.0	-74,518	0.0	-74,518	0.0	-74,518	0.0
20	51.5	45.2	-33,958	0.0	-82,487	0.0	-82,487	0.0	-82,487	0.0	-82,487	0.0
21	50.0	44.6	-42,533	0.0	-90,136	0.0	-90,136	0.0	-90,136	0.0	-90,136	0.0
22	48.1	43.3	-49,548	0.0	-97,856	0.0	-97,856	0.0	-97,856	0.0	-97,856	0.0
23	46.1	41.8	-55,688	0.0	-105,734	0.0	-105,734	0.0	-105,734	0.0	-105,734	0.0
24	43.9	40.1	-60,957	0.0	-112,505	0.0	-112,505	0.0	-112,505	0.0	-112,505	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-41,537	0.0	-27,473	0.0	-42,976	0.0	-42,976	0.0	-42,976	0.0
2	48.7	44.6	-50,796	0.0	-50,372	0.0	-56,416	0.0	-56,416	0.0	-56,416	0.0
3	46.6	42.9	-60,025	0.0	-55,205	0.0	-88,128	0.0	-88,128	0.0	-88,128	0.0
4	44.9	41.4	-66,109	0.0	-61,145	0.0	-97,145	0.0	-97,145	0.0	-97,145	0.0
5	43.9	40.8	-73,643	0.0	-64,598	0.0	-103,216	0.0	-103,216	0.0	-103,216	0.0
6	43.5	40.8	-75,964	0.0	-69,332	0.0	-110,572	0.0	-110,572	0.0	-110,572	0.0
7	44.0	41.4	-76,902	0.0	-70,717	0.0	-113,065	0.0	-113,065	0.0	-113,065	0.0
8	45.4	42.7	-69,444	0.0	-83,507	0.0	-109,250	0.0	-109,250	0.0	-109,250	0.0
9	47.7	44.3	-48,462	0.0	-97,503	0.0	-97,503	0.0	-97,503	0.0	-97,503	0.0
10	50.6	45.8	-23,720	0.0	-78,171	0.0	-78,171	0.0	-78,171	0.0	-78,171	0.0
11	53.9	47.4	-9,823	0.0	-55,183	0.0	-55,183	0.0	-55,183	0.0	-55,183	0.0
12	57.4	49.0	0	0.0	-37,604	0.0	-37,604	0.0	-37,604	0.0	-37,604	0.0
13	60.7	50.8	0	0.0	-29,721	0.0	-29,721	0.0	-29,721	0.0	-29,721	0.0
14	63.6	52.7	0	0.0	-19,537	0.0	-19,537	0.0	-19,537	0.0	-19,537	0.0
15	65.9	53.7	0	0.0	-11,102	0.0	-11,102	0.0	-11,102	0.0	-11,102	0.0
16	67.3	54.4	0	3.0	-5,363	0.0	-5,363	0.0	-5,363	0.0	-5,363	0.0
17	67.8	54.6	0	3.3	-733	0.0	-733	0.0	-733	0.0	-733	0.0
18	67.4	54.8	0	2.8	-1,559	0.0	-1,559	0.0	-1,559	0.0	-1,559	0.0
19	66.4	55.2	0	1.3	-9,028	0.0	-9,028	0.0	-9,028	0.0	-9,028	0.0
20	64.7	56.0	0	0.2	-13,962	0.0	-13,962	0.0	-13,962	0.0	-13,962	0.0
21	62.5	56.0	-7,929	0.0	-19,140	0.0	-19,140	0.0	-19,140	0.0	-19,140	0.0
22	60.0	54.1	-966	0.0	-25,825	0.0	-25,825	0.0	-25,825	0.0	-25,825	0.0
23	57.1	51.9	0	0.0	-30,408	0.0	-30,408	0.0	-30,408	0.0	-30,408	0.0
24	54.2	49.4	0	0.0	-36,985	0.0	-36,985	0.0	-36,985	0.0	-36,985	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	-3,973	0.0	0	0.0	-12,548	0.0	-12,548	0.0	-12,548	0.0
4	55.4	52.4	-10,083	0.0	-24,517	0.0	-30,127	0.0	-30,127	0.0	-30,127	0.0
5	54.2	51.4	-15,080	0.0	-33,844	0.0	-33,844	0.0	-33,844	0.0	-33,844	0.0
6	53.5	50.9	-16,597	0.0	-38,384	0.0	-38,384	0.0	-38,384	0.0	-38,384	0.0
7	53.2	51.1	-16,658	0.0	-40,329	0.0	-40,329	0.0	-40,329	0.0	-40,329	0.0
8	53.9	51.5	-10,924	0.0	-39,438	0.0	-39,438	0.0	-39,438	0.0	-39,438	0.0
9	55.9	52.1	0	0.0	-33,048	0.0	-33,048	0.0	-33,048	0.0	-33,048	0.0
10	58.9	53.2	0	0.0	-24,768	0.0	-24,768	0.0	-24,768	0.0	-24,768	0.0
11	62.6	55.2	0	0.0	-14,293	0.0	-14,293	0.0	-14,293	0.0	-14,293	0.0
12	66.5	57.3	0	0.0	-4,768	0.0	-4,768	0.0	-4,768	0.0	-4,768	0.0
13	70.2	59.6	0	2.9	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	5.4	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	5.8	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	6.1	0	0.7	0	0.7	0	0.7	0	0.7
18	74.9	61.7	0	5.7	0	1.8	0	1.8	0	1.8	0	1.8
19	73.7	62.0	0	4.4	0	1.3	0	1.3	0	1.3	0	1.3
20	72.1	62.4	0	3.1	0	0.7	0	0.7	0	0.7	0	0.7
21	70.2	63.3	0	2.1	0	0.2	0	0.2	0	0.2	0	0.2
22	68.0	62.5	0	1.4	-5,022	0.0	-5,022	0.0	-5,022	0.0	-5,022	0.0
23	65.7	60.5	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

May			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	-1,145	0.0	0	0.1	0	0.1	0	0.1	0	0.1
2	65.7	61.5	0	1.3	-4,151	0.0	-4,151	0.0	-4,151	0.0	-4,151	0.0
3	63.6	59.7	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	-2,683	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	-1,502	0.0	-5,808	0.0	-5,808	0.0	-5,808	0.0	-5,808	0.0
8	60.1	56.3	0	0.5	-16,912	0.0	-16,912	0.0	-16,912	0.0	-16,912	0.0
9	62.4	56.3	0	1.5	-10,375	0.0	-10,375	0.0	-10,375	0.0	-10,375	0.0
10	65.7	57.2	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	5.0	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	6.1	0	0.0	0	0.0	0	0.0	0	0.0
14	81.9	65.3	0	7.0	0	1.2	0	1.2	0	1.2	0	1.2
15	84.1	66.9	0	7.9	0	3.8	0	3.8	0	3.8	0	3.8
16	84.9	67.1	0	8.6	0	4.3	0	4.3	0	4.3	0	4.3
17	84.6	67.3	0	8.8	0	4.5	0	4.5	0	4.5	0	4.5
18	83.8	67.1	0	8.3	0	4.5	0	4.5	0	4.5	0	4.5
19	82.4	67.5	0	7.2	0	4.0	0	4.0	0	4.0	0	4.0
20	80.6	68.9	0	5.8	0	3.2	0	3.2	0	3.2	0	3.2
21	78.5	71.0	0	4.7	0	2.8	0	2.8	0	2.8	0	2.8
22	76.1	69.9	0	3.9	0	2.2	0	2.2	0	2.2	0	2.2
23	73.4	68.0	0	3.1	0	1.4	0	1.4	0	1.4	0	1.4
24	70.8	65.5	0	2.5	0	0.8	0	0.8	0	0.8	0	0.8

June			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	4.8	0	2.0	0	2.6	0	2.6	0	2.6
2	72.6	68.4	0	3.7	0	1.6	0	1.6	0	1.6	0	1.6
3	70.9	67.3	0	3.2	0	1.0	0	1.0	0	1.0	0	1.0
4	69.6	66.5	0	2.7	0	0.5	0	0.5	0	0.5	0	0.5
5	68.7	65.8	0	2.3	0	0.0	0	0.0	0	0.0	0	0.0
6	68.5	65.7	0	2.2	-2,086	0.0	-2,086	0.0	-2,086	0.0	-2,086	0.0
7	69.0	66.3	0	2.2	-3,951	0.0	-3,951	0.0	-3,951	0.0	-3,951	0.0
8	70.6	66.9	0	3.0	0	0.2	0	0.2	0	0.2	0	0.2
9	73.0	67.7	0	4.4	0	0.9	0	0.9	0	0.9	0	0.9
10	76.1	68.1	0	5.6	0	1.9	0	1.9	0	1.9	0	1.9
11	79.5	69.1	0	7.0	0	2.9	0	2.9	0	2.9	0	2.9
12	82.9	70.1	0	8.2	0	4.0	0	4.0	0	4.0	0	4.0
13	86.0	71.0	0	9.3	0	4.8	0	4.8	0	4.8	0	4.8
14	88.4	72.5	0	10.3	0	6.1	0	6.1	0	6.1	0	6.1
15	90.0	74.0	0	11.3	0	7.3	0	7.3	0	7.3	0	7.3
16	90.5	73.7	0	11.8	0	7.6	0	7.6	0	7.6	0	7.6
17	90.3	74.2	0	12.0	0	7.9	0	7.9	0	7.9	0	7.9
18	89.4	73.9	0	11.6	0	7.9	0	7.9	0	7.9	0	7.9
19	88.1	74.5	0	10.4	0	7.3	0	7.3	0	7.3	0	7.3
20	86.4	75.3	0	8.7	0	6.3	0	6.3	0	6.3	0	6.3
21	84.3	76.5	0	7.7	0	5.9	0	5.9	0	5.9	0	5.9
22	81.9	75.7	0	6.7	0	5.4	0	5.4	0	5.4	0	5.4
23	79.5	74.0	0	5.9	0	4.5	0	4.5	0	4.5	0	4.5
24	77.0	72.1	0	5.1	0	3.4	0	3.4	0	3.4	0	3.4

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	4.7	0	1.3	0	1.7	0	1.7	0	1.7
2	72.4	69.4	0	3.5	0	1.1	0	1.2	0	1.2	0	1.2
3	71.3	68.4	0	3.2	0	0.7	0	0.7	0	0.7	0	0.7
4	70.5	67.7	0	2.7	0	0.2	0	0.2	0	0.2	0	0.2
5	70.0	67.4	0	2.4	-1,526	0.0	-1,526	0.0	-1,526	0.0	-1,526	0.0
6	69.9	67.5	0	2.2	-3,918	0.0	-3,918	0.0	-3,918	0.0	-3,918	0.0
7	70.3	68.0	0	2.3	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	3.2	0	0.0	0	0.0	0	0.0	0	0.0
9	73.7	69.5	0	4.3	0	0.8	0	0.8	0	0.8	0	0.8
10	76.2	70.6	0	5.5	0	2.3	0	2.3	0	2.3	0	2.3
11	78.9	71.8	0	6.5	0	3.2	0	3.2	0	3.2	0	3.2
12	81.4	73.0	0	8.0	0	4.3	0	4.3	0	4.3	0	4.3
13	83.4	74.4	0	9.0	0	5.3	0	5.3	0	5.3	0	5.3
14	84.8	74.8	0	9.7	0	5.9	0	5.9	0	5.9	0	5.9
15	85.2	75.0	0	10.7	0	6.7	0	6.7	0	6.7	0	6.7
16	85.1	75.0	0	11.2	0	7.1	0	7.1	0	7.1	0	7.1
17	84.6	74.7	0	11.5	0	6.8	0	6.8	0	6.8	0	6.8
18	83.8	74.6	0	10.9	0	6.8	0	6.8	0	6.8	0	6.8
19	82.7	74.6	0	9.7	0	6.3	0	6.3	0	6.3	0	6.3
20	81.4	74.4	0	8.3	0	5.3	0	5.3	0	5.3	0	5.3
21	79.9	74.9	0	7.2	0	4.9	0	4.9	0	4.9	0	4.9
22	78.4	74.0	0	6.2	0	4.0	0	4.0	0	4.0	0	4.0
23	76.8	72.7	0	5.6	0	3.2	0	3.2	0	3.2	0	3.2
24	75.2	71.6	0	4.9	0	2.4	0	2.4	0	2.4	0	2.4

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	4.4	0	1.6	0	2.1	0	2.1	0	2.1
2	73.2	70.3	0	3.4	0	1.4	0	1.4	0	1.4	0	1.4
3	71.7	68.9	0	2.7	0	0.9	0	0.9	0	0.9	0	0.9
4	70.4	67.8	0	2.4	0	0.4	0	0.4	0	0.4	0	0.4
5	69.5	66.8	0	2.1	-2,210	0.0	-2,210	0.0	-2,210	0.0	-2,210	0.0
6	68.9	66.4	0	1.9	-5,047	0.0	-5,047	0.0	-5,047	0.0	-5,047	0.0
7	68.7	66.4	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	3.5	0	0.0	0	0.0	0	0.0	0	0.0
10	73.2	67.7	0	4.7	0	0.3	0	0.3	0	0.3	0	0.3
11	76.2	68.8	0	6.1	0	2.1	0	2.1	0	2.1	0	2.1
12	79.3	70.3	0	7.1	0	3.1	0	3.1	0	3.1	0	3.1
13	82.3	72.2	0	8.4	0	4.1	0	4.1	0	4.1	0	4.1
14	84.7	73.7	0	9.5	0	5.3	0	5.3	0	5.3	0	5.3
15	86.3	74.6	0	10.4	0	6.3	0	6.3	0	6.3	0	6.3
16	86.8	75.1	0	11.2	0	6.9	0	6.9	0	6.9	0	6.9
17	86.6	75.1	0	11.0	0	7.0	0	7.0	0	7.0	0	7.0
18	86.0	75.3	0	10.5	0	7.1	0	7.1	0	7.1	0	7.1
19	85.1	76.0	0	9.0	0	6.2	0	6.2	0	6.2	0	6.2
20	83.8	76.8	0	7.7	0	5.5	0	5.5	0	5.5	0	5.5
21	82.3	77.2	0	6.9	0	5.2	0	5.2	0	5.2	0	5.2
22	80.6	76.3	0	5.8	0	4.6	0	4.6	0	4.6	0	4.6
23	78.7	75.3	0	5.1	0	3.7	0	3.7	0	3.7	0	3.7
24	76.8	73.7	0	4.3	0	2.9	0	2.9	0	2.9	0	2.9

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	1.2	-4,696	0.0	-4,696	0.0	-4,696	0.0	-4,696	0.0
3	65.8	63.4	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	0.1	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	0.4	-16,627	0.0	-16,627	0.0	-16,627	0.0	-16,627	0.0
9	64.7	61.8	0	1.1	-11,433	0.0	-11,433	0.0	-11,433	0.0	-11,433	0.0
10	67.6	62.1	0	2.1	-3,175	0.0	-3,175	0.0	-3,175	0.0	-3,175	0.0
11	71.1	63.1	0	3.3	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	5.6	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	6.7	0	0.0	0	0.0	0	0.0	0	0.0
15	83.0	70.0	0	7.7	0	3.1	0	3.1	0	3.1	0	3.1
16	83.7	70.5	0	8.4	0	3.9	0	3.9	0	3.9	0	3.9
17	83.4	70.5	0	8.1	0	4.3	0	4.3	0	4.3	0	4.3
18	82.8	70.9	0	7.3	0	4.0	0	4.0	0	4.0	0	4.0
19	81.6	72.7	0	5.8	0	3.1	0	3.1	0	3.1	0	3.1
20	80.1	74.7	0	4.9	0	3.2	0	3.2	0	3.2	0	3.2
21	78.3	74.1	0	4.1	0	2.8	0	2.8	0	2.8	0	2.8
22	76.3	72.4	0	3.3	0	2.0	0	2.0	0	2.0	0	2.0
23	74.1	70.7	0	2.7	0	1.4	0	1.4	0	1.4	0	1.4
24	71.8	68.9	0	2.1	0	0.7	0	0.7	0	0.7	0	0.7

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-15,303	0.0	-40,183	0.0	-40,183	0.0	-40,183	0.0
2	50.1	48.6	0	0.0	-44,944	0.0	-44,944	0.0	-44,944	0.0	-44,944	0.0
3	48.4	46.9	-17,553	0.0	-49,076	0.0	-49,076	0.0	-49,076	0.0	-49,076	0.0
4	47.1	45.8	-36,148	0.0	-54,799	0.0	-54,799	0.0	-54,799	0.0	-54,799	0.0
5	46.3	44.8	-39,283	0.0	-58,315	0.0	-58,315	0.0	-89,890	0.0	-89,890	0.0
6	46.0	44.5	-40,622	0.0	-63,026	0.0	-72,512	0.0	-98,669	0.0	-98,669	0.0
7	46.8	45.3	-40,978	0.0	-63,714	0.0	-99,723	0.0	-99,723	0.0	-99,723	0.0
8	48.9	47.5	-38,605	0.0	-60,966	0.0	-94,435	0.0	-94,435	0.0	-94,435	0.0
9	52.2	49.9	-30,293	0.0	-56,002	0.0	-79,500	0.0	-79,500	0.0	-79,500	0.0
10	56.2	52.5	-17,668	0.0	-45,449	0.0	-55,411	0.0	-55,411	0.0	-55,411	0.0
11	60.4	54.4	-2,946	0.0	-34,677	0.0	-34,677	0.0	-34,677	0.0	-34,677	0.0
12	64.4	56.0	0	0.0	-25,081	0.0	-25,081	0.0	-25,081	0.0	-25,081	0.0
13	67.7	57.3	0	0.0	-15,302	0.0	-15,302	0.0	-15,302	0.0	-15,302	0.0
14	69.8	58.2	0	0.0	-6,142	0.0	-6,142	0.0	-6,142	0.0	-6,142	0.0
15	70.6	58.1	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	3.3	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	3.2	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	0.1	-10,997	0.0	-10,997	0.0	-10,997	0.0	-10,997	0.0
21	62.1	59.4	-6,922	0.0	-17,510	0.0	-17,510	0.0	-17,510	0.0	-17,510	0.0
22	59.6	57.3	-893	0.0	-23,449	0.0	-23,449	0.0	-23,449	0.0	-23,449	0.0
23	57.0	55.1	0	0.0	-27,596	0.0	-27,596	0.0	-27,596	0.0	-27,596	0.0
24	54.5	52.7	0	0.0	-33,132	0.0	-33,132	0.0	-33,132	0.0	-33,132	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-33,405	0.0	-42,583	0.0	-42,583	0.0	-42,583	0.0	-42,583	0.0
2	49.4	47.3	-37,855	0.0	-48,195	0.0	-49,807	0.0	-49,807	0.0	-49,807	0.0
3	47.2	45.3	-43,225	0.0	-54,534	0.0	-83,777	0.0	-83,777	0.0	-83,777	0.0
4	45.3	43.4	-46,931	0.0	-58,980	0.0	-92,362	0.0	-92,362	0.0	-92,362	0.0
5	43.9	42.2	-52,961	0.0	-62,731	0.0	-98,950	0.0	-98,950	0.0	-98,950	0.0
6	43.0	41.4	-79,743	0.0	-67,814	0.0	-106,832	0.0	-106,832	0.0	-106,832	0.0
7	42.7	41.2	-79,594	0.0	-70,234	0.0	-111,076	0.0	-111,076	0.0	-111,076	0.0
8	43.5	42.0	-74,712	0.0	-75,800	0.0	-114,035	0.0	-114,035	0.0	-114,035	0.0
9	45.9	44.0	-55,018	0.0	-101,612	0.0	-101,612	0.0	-101,612	0.0	-101,612	0.0
10	49.4	46.6	-30,474	0.0	-82,250	0.0	-82,250	0.0	-82,250	0.0	-82,250	0.0
11	53.8	48.6	-16,864	0.0	-60,571	0.0	-60,571	0.0	-60,571	0.0	-60,571	0.0
12	58.4	50.6	-2,794	0.0	-43,083	0.0	-43,083	0.0	-43,083	0.0	-43,083	0.0
13	62.8	52.6	0	0.0	-32,757	0.0	-32,757	0.0	-32,757	0.0	-32,757	0.0
14	66.3	54.5	0	0.0	-22,621	0.0	-22,621	0.0	-22,621	0.0	-22,621	0.0
15	68.7	55.7	0	0.0	-13,277	0.0	-13,277	0.0	-13,277	0.0	-13,277	0.0
16	69.5	56.1	0	0.4	-8,253	0.0	-8,253	0.0	-8,253	0.0	-8,253	0.0
17	69.2	55.8	0	1.9	-7,150	0.0	-7,150	0.0	-7,150	0.0	-7,150	0.0
18	68.3	57.0	0	0.9	-12,505	0.0	-12,505	0.0	-12,505	0.0	-12,505	0.0
19	66.9	59.4	0	0.0	-15,819	0.0	-15,819	0.0	-15,819	0.0	-15,819	0.0
20	65.0	59.4	0	0.0	-19,900	0.0	-19,900	0.0	-19,900	0.0	-19,900	0.0
21	62.8	58.2	0	0.0	-21,920	0.0	-21,920	0.0	-21,920	0.0	-21,920	0.0
22	60.2	56.1	0	0.0	-27,823	0.0	-27,823	0.0	-27,823	0.0	-27,823	0.0
23	57.5	54.0	0	0.0	-31,340	0.0	-31,340	0.0	-31,340	0.0	-31,340	0.0
24	54.7	51.7	-16,428	0.0	-37,158	0.0	-37,158	0.0	-37,158	0.0	-37,158	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-49,969	0.0	-66,425	0.0	-101,485	0.0	-101,485	0.0	-101,485	0.0
2	43.2	41.1	-58,124	0.0	-70,520	0.0	-109,373	0.0	-109,373	0.0	-109,373	0.0
3	41.8	39.8	-87,377	0.0	-74,202	0.0	-115,927	0.0	-115,927	0.0	-115,927	0.0
4	40.7	38.7	-93,817	0.0	-91,093	0.0	-122,223	0.0	-122,223	0.0	-122,223	0.0
5	40.1	38.4	-98,705	0.0	-126,843	0.0	-126,843	0.0	-126,843	0.0	-126,843	0.0
6	39.9	38.4	-100,941	0.0	-131,020	0.0	-131,020	0.0	-131,020	0.0	-131,020	0.0
7	40.5	39.0	-101,327	0.0	-134,832	0.0	-134,832	0.0	-134,832	0.0	-134,832	0.0
8	42.2	40.7	-99,307	0.0	-133,434	0.0	-133,434	0.0	-133,434	0.0	-133,434	0.0
9	44.9	43.4	-84,286	0.0	-123,229	0.0	-123,229	0.0	-123,229	0.0	-123,229	0.0
10	48.2	45.8	-58,771	0.0	-105,319	0.0	-105,319	0.0	-105,319	0.0	-105,319	0.0
11	51.7	48.3	-38,068	0.0	-82,936	0.0	-82,936	0.0	-82,936	0.0	-82,936	0.0
12	55.0	50.7	-25,725	0.0	-61,642	0.0	-61,642	0.0	-61,642	0.0	-61,642	0.0
13	57.7	52.0	-17,166	0.0	-48,341	0.0	-48,341	0.0	-48,341	0.0	-48,341	0.0
14	59.5	52.6	-7,330	0.0	-40,207	0.0	-40,207	0.0	-40,207	0.0	-40,207	0.0
15	60.1	52.7	0	0.0	-34,111	0.0	-34,111	0.0	-34,111	0.0	-34,111	0.0
16	59.9	52.6	0	0.0	-30,494	0.0	-30,494	0.0	-30,494	0.0	-30,494	0.0
17	59.2	52.1	0	0.0	-31,658	0.0	-31,658	0.0	-31,658	0.0	-31,658	0.0
18	58.2	51.8	0	0.0	-36,691	0.0	-36,691	0.0	-36,691	0.0	-36,691	0.0
19	56.8	52.2	-12,486	0.0	-41,250	0.0	-41,250	0.0	-41,250	0.0	-41,250	0.0
20	55.0	51.4	-23,107	0.0	-45,003	0.0	-45,003	0.0	-45,003	0.0	-45,003	0.0
21	53.1	50.1	-29,971	0.0	-61,069	0.0	-61,069	0.0	-61,069	0.0	-61,069	0.0
22	51.0	48.1	-36,181	0.0	-74,767	0.0	-74,767	0.0	-74,767	0.0	-74,767	0.0
23	48.9	46.2	-41,313	0.0	-83,850	0.0	-83,850	0.0	-83,850	0.0	-83,850	0.0
24	46.9	44.1	-45,820	0.0	-92,019	0.0	-92,019	0.0	-92,019	0.0	-92,019	0.0

01 Card - Job Information

 Project: ENERGY STUDY OF COOLING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORPS OF ENGINEERS
 Program User: BON
 Comments: BUILDING 21714 (9 BUILDINGS)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	BUILDING 21714

-----CARD 20-- General Room Parameters-----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	OFFICE AREA	209.25	20.75	2	0		13			

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	STORAGE	209.25	35	2	0		13			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	Heating T'stat Location Flag	T'stat	Mass / No. Hrs	Carpet On Floor
1		50		CLGCONST			HTGCONST			LIGHT30	NO
2		50					HTGCONST			LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				182			
2	1	YES				182			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	20.75	12		8	270			
1	2	209.25	12		8	0			
1	3	20.75	12		6	90			
2	1	35	12		6	90			
2	2	209.25	12		6	180			
2	3	35	12		6	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	54.2	10	1	1.03	.87					
2	2	4	3.5	20	1.03	.87					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 26-- Schedules -----

Room	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	Minimum	Fans	Fan	Fan	Exhaust	Controls
2	FGHEAT	FGHEAT	YES	YES		

-----CARD 27-- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Percent	--- Daylighting ---		
Number	Value	Units	Sensible	Latent	Value	Units	Fixture Type	Ballast Factor	Lights to Ret. Air	Reference Point 1	Reference Point 2
1	50	PEOPLE	255	255	8600	WATTS	SUSFLUOR				
2	15	PEOPLE	315	435	11000	WATTS	SUSFLUOR				

-----CARD 28--- Miscellaneous Equipment -----

Room	Misc	Equipment	Equipment	Energy	Energy	Schedule	Energy	Percent	Percent	Percent	Radiant	Optional	
Number	Number	Descrip	Value	Units	Code	Code	of Load	Sensible	Misc. Load	Misc. Sens	to Ret. Air	Fraction	Air Path
1	1	ALL P.C.'S	19.2	KW	FGHEAT								
1	2	ALL PRINTERS	2.4	KW	FGHEAT								
1	3	COPIER	2.4	KW	FGHEAT								
1	4	FRIG	4.8	KW	FGHEAT								
1	5	MISS.	11.4	KW	FGHEAT								

-----CARD 29--- Room Airflows -----

Room	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
Number	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
Number	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1	1	CFM-SF	1	CFM-SF						
2	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 40--- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----							
System		Ventil					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure
1	FC						
2	UH						

-----CARD 41-- Zone Assignment -----

System	Ref #1		Ref #2		Ref #3		Ref #4		Ref #5		Ref #6	
Set	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End	Begin	End
1	1	1										
2	2	2										

-----CARD 42--- Fan SP and Duct Parameters-----

System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1											
2											

-----CARD 48-- Cooling Capacity Overrides -----

System	Misc			-----MAIN COOLING-----				---AUX COOLING---	
Set	People	Lights	Loads	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity
Number	Variance	Variance	Variance	Value	Units	Sizing	Location	Value	Units
1				75					
2				75					

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHO FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

FC FAN COIL
UH UNIT HEATERS

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 75
24

Schedule Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 72
24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	PerCent
0		100
24		

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**          T R A C E    6 0 0    A N A L Y S I S          **  
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORPS OF ENGINEERS
BON
BUILDING 29719 (4 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 12: 6:19 8/15/94
Dataset Name: FGTPS3B .TM

System 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==> Mo/Hr: 6/17 * Mo/Hr: 6/17 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 98/ 74/ 91.0 * OADB: 98 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	31,432	0	0	31,432	25.12	*	31,432	29.36	*	-18,041	-18,041	14.57
Glass Solar	24,900	0	0	24,900	19.90	*	24,900	23.26	*	0	0	0.00
Glass Cond	5,668	0	0	5,668	4.53	*	5,668	5.29	*	-12,618	-12,618	10.19
Wall Cond	38,849	0	0	38,849	31.05	*	38,849	36.29	*	-62,436	-62,436	50.42
Partition	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	10,519	0	0	10,519	8.41	*	6,196	5.79	*	-15,022	-15,022	12.13
Sub Total==>	111,368	0	0	111,368	89.00	*	107,045	100.00	*	-108,118	-108,118	87.30
Internal Loads												
Lights	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
People	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	13,765	11.00	*	0	0.00	*	0	-15,726	12.70
Sup. Fan Heat	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ret. Fan Heat	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Duct Heat Pkup	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
OV/UNDR Sizing	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Terminal Bypass	0	0	0	0	-0.00	*	0	0.00	*	0	0	0.00
Grand Total==>	111,368	0	0	125,132	100.00	*	107,045	100.00	*	-108,118	-123,844	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains		
Main Clg	10.4	125.1	115.2	6,409	76.1	63.2	66.5	59.9	56.8	64.3	Floor	4,342
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Totals	10.4	125.1									Roof	4,342
											Wall	3,009
												249
												8

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)--		
	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating	Clg % OA	4.9	Type	Clg	Htg
					Vent	315	315	Clg Cfm/Sqft	1.48	SADB	59.9	83.2
Main Htg	-123.8	6,409	65.8	83.2	Infil	241	301	Clg Cfm/Ton	614.60	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	6,409	6,409	Clg Sqft/Ton	416.39	Return	75.0	68.0
Preheat	-0.0	6,409	65.8	59.9	Mincfm	0	0	Clg Btuh/Sqft	28.82	Ret/OA	76.1	65.8
Reheat	0.0	0	0.0	0.0	Return	6,409	6,409	No. People	21	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	315	315	Htg % OA	4.9	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.48	Fn BldTD	0.0	0.0
Total	-123.8				Auxil	0	0	Htg Btuh/SqFt	-28.52	Fn Frict	0.0	0.0

System 2 Block UH - UNIT HEATERS

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==> Mo/Hr: 0/ 0 * Mo/Hr: 0/ 0 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 0/ 0/ 0.0 * OADB: 0 * OADB: 23

	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Perct Of Tot (%)	*	Space Sensible (Btuh)	Perct Of Tot (%)	*	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Perct Of Tot (%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	0	0		0	0.00	*	0	0.00	*	-30,431	-30,431	35.32
Glass Solar	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Glass Cond	0	0		0	0.00	*	0	0.00	*	-14,189	-14,189	16.47
Wall Cond	0	0		0	0.00	*	0	0.00	*	-24,806	-24,806	28.79
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	0			0	0.00	*	0	0.00	*	-16,730	-16,730	19.42
Sub Total==>	0	0		0	0.00	*	0	0.00	*	-86,155	-86,155	100.00
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat PkUp		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
Grand Total==>	0	0	0	0	0.00	*	0	0.00	*	-86,155	-86,155	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
				Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	7,324	
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Part	0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Roof	7,324	0 0
Totals	0.0	0.0								Wall	3,351	280 8

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity (Mbh)	Coil Airfl. (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating	Clg % OA	0.0	Type	Clg	Htg
					Vent	0	0	Clg Cfm/Sqft	0.00	SADB	0.0	78.6
Main Htg	-86.2	7,324	68.0	78.6	Infil	0	335	Clg Cfm/Ton	0.00	Plenum	0.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	0	7,324	Clg Sqft/Ton	0.00	Return	0.0	68.0
Preheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Sqft	0.00	Ret/OA	0.0	68.0
Reheat	0.0	0	0.0	0.0	Return	0	7,324	No. People	0	Runarnd	0.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	0	0	Htg % OA	0.0	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0
Total	-86.2				Auxil	0	0	Htg Btuh/Sqft	-11.76	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-189,622	0.0	-76,297	0.0	-121,242	0.0	-121,242	0.0	-121,242	0.0
2	32.9	30.7	-167,889	0.0	-78,639	0.0	-124,866	0.0	-124,866	0.0	-124,866	0.0
3	33.1	31.3	-135,874	0.0	-127,834	0.0	-130,799	0.0	-130,799	0.0	-130,799	0.0
4	33.9	32.1	-127,981	0.0	-132,008	0.0	-132,008	0.0	-132,008	0.0	-132,008	0.0
5	35.2	33.5	-127,044	0.0	-135,249	0.0	-135,249	0.0	-135,249	0.0	-135,249	0.0
6	37.0	35.4	-122,959	0.0	-134,788	0.0	-134,788	0.0	-134,788	0.0	-134,788	0.0
7	39.0	37.6	-116,207	0.0	-135,240	0.0	-135,240	0.0	-135,240	0.0	-135,240	0.0
8	41.3	40.1	-115,236	0.0	-130,429	0.0	-130,429	0.0	-130,429	0.0	-130,429	0.0
9	43.7	42.5	-103,488	0.0	-121,578	0.0	-121,578	0.0	-121,578	0.0	-121,578	0.0
10	46.1	44.0	-80,529	0.0	-108,596	0.0	-108,596	0.0	-108,596	0.0	-108,596	0.0
11	48.4	45.0	-50,243	0.0	-90,318	0.0	-90,318	0.0	-90,318	0.0	-90,318	0.0
12	50.5	45.6	-39,233	0.0	-73,332	0.0	-73,332	0.0	-73,332	0.0	-73,332	0.0
13	52.2	46.1	-29,629	0.0	-59,134	0.0	-59,134	0.0	-59,134	0.0	-59,134	0.0
14	53.5	46.4	-20,257	0.0	-47,803	0.0	-47,803	0.0	-47,803	0.0	-47,803	0.0
15	54.3	46.3	-11,248	0.0	-41,527	0.0	-41,527	0.0	-41,527	0.0	-41,527	0.0
16	54.6	46.1	-4,490	0.0	-37,754	0.0	-37,754	0.0	-37,754	0.0	-37,754	0.0
17	54.0	45.9	-3,750	0.0	-37,305	0.0	-37,305	0.0	-37,305	0.0	-37,305	0.0
18	52.5	45.0	-14,293	0.0	-44,088	0.0	-44,088	0.0	-44,088	0.0	-44,088	0.0
19	50.1	44.8	-23,728	0.0	-62,715	0.0	-62,715	0.0	-62,715	0.0	-62,715	0.0
20	47.1	43.3	-31,911	0.0	-72,873	0.0	-72,873	0.0	-72,873	0.0	-72,873	0.0
21	43.7	40.4	-36,748	0.0	-82,562	0.0	-82,562	0.0	-82,562	0.0	-82,562	0.0
22	40.4	37.3	-43,958	0.0	-93,824	0.0	-93,824	0.0	-93,824	0.0	-93,824	0.0
23	37.3	34.9	-48,927	0.0	-101,877	0.0	-101,877	0.0	-101,877	0.0	-101,877	0.0
24	34.9	32.6	-53,033	0.0	-110,656	0.0	-110,656	0.0	-110,656	0.0	-110,656	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-81,051	0.0	-63,626	0.0	-100,291	0.0	-100,291	0.0	-100,291	0.0
2	39.7	37.1	-89,907	0.0	-67,263	0.0	-106,795	0.0	-106,795	0.0	-106,795	0.0
3	37.8	35.1	-96,825	0.0	-70,991	0.0	-113,507	0.0	-113,507	0.0	-113,507	0.0
4	36.3	33.8	-102,192	0.0	-118,685	0.0	-118,685	0.0	-118,685	0.0	-118,685	0.0
5	35.1	32.6	-106,923	0.0	-125,742	0.0	-125,742	0.0	-125,742	0.0	-125,742	0.0
6	34.4	32.0	-110,847	0.0	-129,276	0.0	-129,276	0.0	-129,276	0.0	-129,276	0.0
7	34.1	31.9	-112,918	0.0	-135,190	0.0	-135,190	0.0	-135,190	0.0	-135,190	0.0
8	34.6	32.4	-110,581	0.0	-135,608	0.0	-135,608	0.0	-135,608	0.0	-135,608	0.0
9	36.0	33.8	-96,460	0.0	-129,285	0.0	-129,285	0.0	-129,285	0.0	-129,285	0.0
10	38.2	34.7	-71,479	0.0	-116,673	0.0	-116,673	0.0	-116,673	0.0	-116,673	0.0
11	40.9	36.2	-43,620	0.0	-102,086	0.0	-102,086	0.0	-102,086	0.0	-102,086	0.0
12	43.9	37.4	-33,668	0.0	-88,305	0.0	-88,305	0.0	-88,305	0.0	-88,305	0.0
13	46.9	39.4	-23,775	0.0	-68,760	0.0	-68,760	0.0	-68,760	0.0	-68,760	0.0
14	49.7	41.4	-14,900	0.0	-54,562	0.0	-54,562	0.0	-54,562	0.0	-54,562	0.0
15	51.8	42.8	-5,055	0.0	-48,001	0.0	-48,001	0.0	-48,001	0.0	-48,001	0.0
16	53.2	43.9	0	0.0	-42,156	0.0	-42,156	0.0	-42,156	0.0	-42,156	0.0
17	53.7	44.2	0	0.0	-39,707	0.0	-39,707	0.0	-39,707	0.0	-39,707	0.0
18	53.4	44.4	0	0.0	-43,247	0.0	-43,247	0.0	-43,247	0.0	-43,247	0.0
19	52.7	44.4	-10,251	0.0	-60,386	0.0	-60,386	0.0	-60,386	0.0	-60,386	0.0
20	51.5	45.2	-25,126	0.0	-67,476	0.0	-67,476	0.0	-67,476	0.0	-67,476	0.0
21	50.0	44.6	-32,688	0.0	-74,027	0.0	-74,027	0.0	-74,027	0.0	-74,027	0.0
22	48.1	43.3	-38,738	0.0	-80,356	0.0	-80,356	0.0	-80,356	0.0	-80,356	0.0
23	46.1	41.8	-44,106	0.0	-86,769	0.0	-86,769	0.0	-86,769	0.0	-86,769	0.0
24	43.9	40.1	-48,844	0.0	-91,930	0.0	-91,930	0.0	-91,930	0.0	-91,930	0.0

March	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton				
1	51.3	46.8	-29,894	0.0	0	0.0	-32,986	0.0	-32,986	0.0	-32,986	0.0	-32,986	0.0						
2	48.7	44.6	-38,275	0.0	-39,127	0.0	-39,127	0.0	-39,127	0.0	-39,127	0.0	-39,127	0.0						
3	46.6	42.9	-46,844	0.0	-42,947	0.0	-42,947	0.0	-42,947	0.0	-42,947	0.0	-42,947	0.0						
4	44.9	41.4	-52,343	0.0	-48,066	0.0	-66,768	0.0	-72,863	0.0	-72,863	0.0	-72,863	0.0						
5	43.9	40.8	-59,730	0.0	-51,037	0.0	-82,641	0.0	-82,641	0.0	-82,641	0.0	-82,641	0.0						
6	43.5	40.8	-62,418	0.0	-55,578	0.0	-89,704	0.0	-89,704	0.0	-89,704	0.0	-89,704	0.0						
7	44.0	41.4	-64,234	0.0	-57,204	0.0	-92,562	0.0	-92,562	0.0	-92,562	0.0	-92,562	0.0						
8	45.4	42.7	-58,387	0.0	-56,984	0.0	-89,772	0.0	-89,772	0.0	-89,772	0.0	-89,772	0.0						
9	47.7	44.3	-39,676	0.0	-52,953	0.0	-79,710	0.0	-79,710	0.0	-79,710	0.0	-79,710	0.0						
10	50.6	45.8	-19,714	0.0	-46,689	0.0	-62,502	0.0	-62,502	0.0	-62,502	0.0	-62,502	0.0						
11	53.9	47.4	-7,796	0.0	-40,014	0.0	-41,930	0.0	-41,930	0.0	-41,930	0.0	-41,930	0.0						
12	57.4	49.0	0	0.0	-30,558	0.0	-30,558	0.0	-30,558	0.0	-30,558	0.0	-30,558	0.0						
13	60.7	50.8	0	0.0	-24,268	0.0	-24,268	0.0	-24,268	0.0	-24,268	0.0	-24,268	0.0						
14	63.6	52.7	0	0.0	-15,484	0.0	-15,484	0.0	-15,484	0.0	-15,484	0.0	-15,484	0.0						
15	65.9	53.7	0	0.0	-8,158	0.0	-8,158	0.0	-8,158	0.0	-8,158	0.0	-8,158	0.0						
16	67.3	54.4	0	2.7	-3,095	0.0	-3,095	0.0	-3,095	0.0	-3,095	0.0	-3,095	0.0						
17	67.8	54.6	0	3.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0						
18	67.4	54.8	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0						
19	66.4	55.2	0	1.6	-4,653	0.0	-4,653	0.0	-4,653	0.0	-4,653	0.0	-4,653	0.0						
20	64.7	56.0	0	0.6	-10,439	0.0	-10,439	0.0	-10,439	0.0	-10,439	0.0	-10,439	0.0						
21	62.5	56.0	-2,234	0.0	-14,556	0.0	-14,556	0.0	-14,556	0.0	-14,556	0.0	-14,556	0.0						
22	60.0	54.1	0	0.0	-20,033	0.0	-20,033	0.0	-20,033	0.0	-20,033	0.0	-20,033	0.0						
23	57.1	51.9	0	0.0	-23,217	0.0	-23,217	0.0	-23,217	0.0	-23,217	0.0	-23,217	0.0						
24	54.2	49.4	0	0.0	-28,395	0.0	-28,395	0.0	-28,395	0.0	-28,395	0.0	-28,395	0.0						

April	----- Design -----					----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	61.0	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
2	58.9	54.9		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
3	57.0	53.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
4	55.4	52.4		0		0.0		0		0.0	-10,691		0.0		-10,691		0.0		-10,691		0.0	
5	54.2	51.4	-10,640			0.0	-24,143			0.0	-25,253		0.0		-25,253		0.0		-25,253		0.0	
6	53.5	50.9	-12,398			0.0	-29,456			0.0	-29,456		0.0		-29,456		0.0		-29,456		0.0	
7	53.2	51.1	-12,991			0.0	-31,256			0.0	-31,256		0.0		-31,256		0.0		-31,256		0.0	
8	53.9	51.5	-8,269			0.0	-30,703			0.0	-30,703		0.0		-30,703		0.0		-30,703		0.0	
9	55.9	52.1		0		0.0	-25,278			0.0	-25,278		0.0		-25,278		0.0		-25,278		0.0	
10	58.9	53.2		0		0.0	-18,446			0.0	-18,446		0.0		-18,446		0.0		-18,446		0.0	
11	62.6	55.2		0		0.0	-9,756			0.0	-9,756		0.0		-9,756		0.0		-9,756		0.0	
12	66.5	57.3		0		0.0	-2,114			0.0	-2,114		0.0		-2,114		0.0		-2,114		0.0	
13	70.2	59.6		0		2.2		0		0.0		0		0.0		0		0.0		0		0.0
14	73.2	61.0		0		4.0		0		0.0		0		0.0		0		0.0		0		0.0
15	75.2	62.2		0		5.0		0		0.0		0		0.0		0		0.0		0		0.0
16	75.9	62.2		0		5.4		0		0.0		0		0.0		0		0.0		0		0.0
17	75.6	62.0		0		5.8		0		0.6		0		0.6		0		0.6		0		0.6
18	74.9	61.7		0		5.5		0		1.8		0		1.8		0		1.8		0		1.8
19	73.7	62.0		0		4.3		0		1.3		0		1.3		0		1.3		0		1.3
20	72.1	62.4		0		3.1		0		0.8		0		0.8		0		0.8		0		0.8
21	70.2	63.3		0		2.2		0		0.4		0		0.4		0		0.4		0		0.4
22	68.0	62.5		0		1.6	-1,643			0.0	-1,643		0.0		-1,643		0.0		-1,643		0.0	
23	65.7	60.5		0		0.9		0		0.0		0		0.0		0		0.0		0		0.0
24	63.4	58.5		0		0.5		0		0.0		0		0.0		0		0.0		0		0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

May			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	QAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	0.7	0	0.4	0	0.4	0	0.4	0	0.4
2	65.7	61.5	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	-126	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	3.4	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	5.4	0	0.0	0	0.0	0	0.0	0	0.0
14	81.9	65.3	0	6.2	0	0.9	0	0.9	0	0.9	0	0.9
15	84.1	66.9	0	7.0	0	3.4	0	3.4	0	3.4	0	3.4
16	84.9	67.1	0	7.7	0	3.9	0	3.9	0	3.9	0	3.9
17	84.6	67.3	0	8.0	0	4.1	0	4.1	0	4.1	0	4.1
18	83.8	67.1	0	7.7	0	4.1	0	4.1	0	4.1	0	4.1
19	82.4	67.5	0	6.8	0	3.7	0	3.7	0	3.7	0	3.7
20	80.6	68.9	0	5.5	0	3.0	0	3.0	0	3.0	0	3.0
21	78.5	71.0	0	4.5	0	2.4	0	2.4	0	2.4	0	2.4
22	76.1	69.9	0	3.8	0	1.9	0	1.9	0	1.9	0	1.9
23	73.4	68.0	0	3.1	0	1.4	0	1.4	0	1.4	0	1.4
24	70.8	65.5	0	2.5	0	1.0	0	1.0	0	1.0	0	1.0

June			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	QAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	4.3	0	2.0	0	2.3	0	2.3	0	2.3
2	72.6	68.4	0	3.4	0	1.5	0	1.6	0	1.6	0	1.6
3	70.9	67.3	0	3.0	0	1.0	0	1.0	0	1.0	0	1.0
4	69.6	66.5	0	2.6	0	0.7	0	0.8	0	0.8	0	0.8
5	68.7	65.8	0	2.2	0	0.3	0	0.3	0	0.3	0	0.3
6	68.5	65.7	0	2.0	0	0.1	0	0.1	0	0.1	0	0.1
7	69.0	66.3	0	2.0	-1,055	0.0	-1,055	0.0	-1,055	0.0	-1,055	0.0
8	70.6	66.9	0	2.6	0	0.4	0	0.4	0	0.4	0	0.4
9	73.0	67.7	0	3.8	0	1.0	0	1.0	0	1.0	0	1.0
10	76.1	68.1	0	4.9	0	1.8	0	1.8	0	1.8	0	1.8
11	79.5	69.1	0	6.1	0	2.6	0	2.7	0	2.7	0	2.7
12	82.9	70.1	0	7.0	0	3.6	0	3.6	0	3.6	0	3.6
13	86.0	71.0	0	7.9	0	4.2	0	4.2	0	4.2	0	4.2
14	88.4	72.5	0	8.8	0	5.2	0	5.2	0	5.2	0	5.2
15	90.0	74.0	0	9.7	0	6.2	0	6.2	0	6.2	0	6.2
16	90.5	73.7	0	10.2	0	6.6	0	6.6	0	6.6	0	6.6
17	90.3	74.2	0	10.4	0	6.7	0	6.7	0	6.7	0	6.7
18	89.4	73.9	0	10.2	0	6.7	0	6.7	0	6.7	0	6.7
19	88.1	74.5	0	9.2	0	6.2	0	6.2	0	6.2	0	6.2
20	86.4	75.3	0	7.7	0	5.2	0	5.2	0	5.2	0	5.2
21	84.3	76.5	0	6.7	0	4.7	0	4.7	0	4.7	0	4.7
22	81.9	75.7	0	5.9	0	4.2	0	4.2	0	4.2	0	4.2
23	79.5	74.0	0	5.2	0	3.6	0	3.6	0	3.6	0	3.6
24	77.0	72.1	0	4.6	0	2.9	0	2.9	0	2.9	0	2.9

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	4.2	0	1.3	0	1.6	0	1.6	0	1.6
2	72.4	69.4	0	3.2	0	1.0	0	1.2	0	1.2	0	1.2
3	71.3	68.4	0	2.8	0	0.8	0	0.8	0	0.8	0	0.8
4	70.5	67.7	0	2.4	0	0.3	0	0.4	0	0.4	0	0.4
5	70.0	67.4	0	2.2	0	0.1	0	0.1	0	0.1	0	0.1
6	69.9	67.5	0	2.0	-1,457	0.0	-1,457	0.0	-1,457	0.0	-1,457	0.0
7	70.3	68.0	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	2.8	-392	0.0	-392	0.0	-392	0.0	-392	0.0
9	73.7	69.5	0	3.8	0	1.1	0	1.1	0	1.1	0	1.1
10	76.2	70.6	0	4.7	0	2.0	0	2.0	0	2.0	0	2.0
11	78.9	71.8	0	5.6	0	2.8	0	2.8	0	2.8	0	2.8
12	81.4	73.0	0	6.7	0	3.6	0	3.6	0	3.6	0	3.6
13	83.4	74.4	0	7.6	0	4.5	0	4.5	0	4.5	0	4.5
14	84.8	74.8	0	8.1	0	5.0	0	5.0	0	5.0	0	5.0
15	85.2	75.0	0	9.2	0	5.7	0	5.7	0	5.7	0	5.7
16	85.1	75.0	0	9.5	0	6.0	0	6.0	0	6.0	0	6.0
17	84.6	74.7	0	9.8	0	5.8	0	5.8	0	5.8	0	5.8
18	83.8	74.6	0	9.5	0	5.8	0	5.8	0	5.8	0	5.8
19	82.7	74.6	0	8.4	0	5.3	0	5.3	0	5.3	0	5.3
20	81.4	74.4	0	7.2	0	4.3	0	4.3	0	4.3	0	4.3
21	79.9	74.9	0	6.2	0	3.8	0	3.8	0	3.8	0	3.8
22	78.4	74.0	0	5.4	0	3.3	0	3.3	0	3.3	0	3.3
23	76.8	72.7	0	4.9	0	2.7	0	2.7	0	2.7	0	2.7
24	75.2	71.6	0	4.2	0	2.0	0	2.0	0	2.0	0	2.0

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	4.0	0	1.4	0	1.8	0	1.8	0	1.8
2	73.2	70.3	0	3.2	0	1.1	0	1.3	0	1.3	0	1.3
3	71.7	68.9	0	2.4	0	0.8	0	0.9	0	0.9	0	0.9
4	70.4	67.8	0	2.2	0	0.5	0	0.5	0	0.5	0	0.5
5	69.5	66.8	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
6	68.9	66.4	0	1.7	-2,103	0.0	-2,103	0.0	-2,103	0.0	-2,103	0.0
7	68.7	66.4	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	2.0	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	2.9	0	0.0	0	0.0	0	0.0	0	0.0
10	73.2	67.7	0	4.1	0	0.9	0	0.9	0	0.9	0	0.9
11	76.2	68.8	0	5.2	0	2.1	0	2.1	0	2.1	0	2.1
12	79.3	70.3	0	6.0	0	2.8	0	2.8	0	2.8	0	2.8
13	82.3	72.2	0	7.0	0	3.5	0	3.5	0	3.5	0	3.5
14	84.7	73.7	0	7.9	0	4.5	0	4.5	0	4.5	0	4.5
15	86.3	74.6	0	8.8	0	5.3	0	5.3	0	5.3	0	5.3
16	86.8	75.1	0	9.5	0	5.8	0	5.8	0	5.8	0	5.8
17	86.6	75.1	0	9.5	0	5.9	0	5.9	0	5.9	0	5.9
18	86.0	75.3	0	9.1	0	5.9	0	5.9	0	5.9	0	5.9
19	85.1	76.0	0	7.8	0	5.1	0	5.1	0	5.1	0	5.1
20	83.8	76.8	0	6.5	0	4.2	0	4.2	0	4.2	0	4.2
21	82.3	77.2	0	5.9	0	3.9	0	3.9	0	3.9	0	3.9
22	80.6	76.3	0	5.0	0	3.5	0	3.5	0	3.5	0	3.5
23	78.7	75.3	0	4.4	0	2.9	0	2.9	0	2.9	0	2.9
24	76.8	73.7	0	3.8	0	2.3	0	2.3	0	2.3	0	2.3

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

September			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	69.6	67.4		0		1.9		0		0.2		0		0.3		0		0.3		0		0.3
2	67.6	65.0		0		1.3		-1,125		0.0		-1,125		0.0		-1,125		0.0		-1,125		0.0
3	65.8	63.4		0		1.0		0		0.0		0		0.0		0		0.0		0		0.0
4	64.3	62.2		0		0.7		0		0.0		0		0.0		0		0.0		0		0.0
5	63.1	61.1		0		0.5		0		0.0		0		0.0		0		0.0		0		0.0
6	62.4	60.3		0		0.3		0		0.0		0		0.0		0		0.0		0		0.0
7	62.2	60.2		0		0.2		0		0.0		0		0.0		0		0.0		0		0.0
8	62.9	60.9		0		0.3		0		0.0		0		0.0		0		0.0		0		0.0
9	64.7	61.8		0		0.9		-2,530		0.0		-2,530		0.0		-2,530		0.0		-2,530		0.0
10	67.6	62.1		0		1.8		-1,051		0.0		-1,051		0.0		-1,051		0.0		-1,051		0.0
11	71.1	63.1		0		2.9		0		0.0		0		0.0		0		0.0		0		0.0
12	74.8	64.6		0		3.9		0		0.0		0		0.0		0		0.0		0		0.0
13	78.3	66.7		0		4.8		0		0.0		0		0.0		0		0.0		0		0.0
14	81.2	68.4		0		5.8		0		0.0		0		0.0		0		0.0		0		0.0
15	83.0	70.0		0		6.7		0		2.3		0		2.3		0		2.3		0		2.3
16	83.7	70.5		0		7.4		0		3.3		0		3.3		0		3.3		0		3.3
17	83.4	70.5		0		7.3		0		3.8		0		3.8		0		3.8		0		3.8
18	82.8	70.9		0		6.6		0		3.4		0		3.4		0		3.4		0		3.4
19	81.6	72.7		0		5.2		0		2.6		0		2.6		0		2.6		0		2.6
20	80.1	74.7		0		4.3		0		2.4		0		2.4		0		2.4		0		2.4
21	78.3	74.1		0		3.7		0		2.2		0		2.2		0		2.2		0		2.2
22	76.3	72.4		0		3.1		0		1.6		0		1.6		0		1.6		0		1.6
23	74.1	70.7		0		2.6		0		1.2		0		1.2		0		1.2		0		1.2
24	71.8	68.9		0		2.1		0		0.8		0		0.8		0		0.8		0		0.8

October			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	52.2	50.5		0		0.0		0		0.0		-30,627		0.0		-30,627		0.0		-30,627		0.0
2	50.1	48.6		0		0.0		-26,365		0.0		-34,375		0.0		-34,375		0.0		-34,375		0.0
3	48.4	46.9		0		0.0		-37,687		0.0		-37,687		0.0		-37,687		0.0		-37,687		0.0
4	47.1	45.8		-25,737		0.0		-42,782		0.0		-42,782		0.0		-42,782		0.0		-42,782		0.0
5	46.3	44.8		-31,320		0.0		-45,912		0.0		-45,912		0.0		-45,912		0.0		-45,912		0.0
6	46.0	44.5		-32,901		0.0		-50,479		0.0		-50,479		0.0		-50,479		0.0		-58,975		0.0
7	46.8	45.3		-33,884		0.0		-51,553		0.0		-51,553		0.0		-78,950		0.0		-81,271		0.0
8	48.9	47.5		-32,573		0.0		-49,818		0.0		-49,818		0.0		-77,520		0.0		-77,520		0.0
9	52.2	49.9		-25,805		0.0		-46,447		0.0		-46,447		0.0		-65,002		0.0		-65,002		0.0
10	56.2	52.5		-14,965		0.0		-37,824		0.0		-37,824		0.0		-43,841		0.0		-43,841		0.0
11	60.4	54.4		-2,223		0.0		-29,079		0.0		-29,079		0.0		-29,079		0.0		-29,079		0.0
12	64.4	56.0		0		0.0		-21,413		0.0		-21,413		0.0		-21,413		0.0		-21,413		0.0
13	67.7	57.3		0		0.0		-13,227		0.0		-13,227		0.0		-13,227		0.0		-13,227		0.0
14	69.8	58.2		0		0.0		-5,080		0.0		-5,080		0.0		-5,080		0.0		-5,080		0.0
15	70.6	58.1		0		0.6		0		0.0		0		0.0		0		0.0		0		0.0
16	70.3	57.5		0		3.2		0		0.0		0		0.0		0		0.0		0		0.0
17	69.5	57.3		0		3.1		0		0.0		0		0.0		0		0.0		0		0.0
18	68.2	57.7		0		2.1		0		0.0		0		0.0		0		0.0		0		0.0
19	66.5	60.6		0		1.1		0		0.0		0		0.0		0		0.0		0		0.0
20	64.4	60.8		0		0.4		-984		0.0		-984		0.0		-984		0.0		-984		0.0
21	62.1	59.4		-2,531		0.0		-12,732		0.0		-12,732		0.0		-12,732		0.0		-12,732		0.0
22	59.6	57.3		0		0.0		-17,465		0.0		-17,465		0.0		-17,465		0.0		-17,465		0.0
23	57.0	55.1		0		0.0		-20,357		0.0		-20,357		0.0		-20,357		0.0		-20,357		0.0
24	54.5	52.7		0		0.0		-24,687		0.0		-24,687		0.0		-24,687		0.0		-24,687		0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-25,539	0.0	-25,177	0.0	-32,931	0.0	-32,931	0.0	-32,931	0.0
2	49.4	47.3	-29,361	0.0	-37,288	0.0	-37,288	0.0	-37,288	0.0	-37,288	0.0
3	47.2	45.3	-34,201	0.0	-42,566	0.0	-42,566	0.0	-42,566	0.0	-42,566	0.0
4	45.3	43.4	-37,520	0.0	-46,094	0.0	-53,013	0.0	-63,654	0.0	-63,654	0.0
5	43.9	42.2	-40,036	0.0	-49,170	0.0	-78,374	0.0	-78,374	0.0	-78,374	0.0
6	43.0	41.4	-41,890	0.0	-53,818	0.0	-85,598	0.0	-85,598	0.0	-85,598	0.0
7	42.7	41.2	-49,679	0.0	-56,094	0.0	-89,622	0.0	-89,622	0.0	-89,622	0.0
8	43.5	42.0	-63,363	0.0	-59,244	0.0	-93,167	0.0	-93,167	0.0	-93,167	0.0
9	45.9	44.0	-46,232	0.0	-56,001	0.0	-82,501	0.0	-82,501	0.0	-82,501	0.0
10	49.4	46.6	-26,613	0.0	-50,137	0.0	-65,702	0.0	-65,702	0.0	-65,702	0.0
11	53.8	48.6	-15,223	0.0	-44,051	0.0	-47,245	0.0	-47,245	0.0	-47,245	0.0
12	58.4	50.6	-3,229	0.0	-36,519	0.0	-36,519	0.0	-36,519	0.0	-36,519	0.0
13	62.8	52.6	0	0.0	-28,317	0.0	-28,317	0.0	-28,317	0.0	-28,317	0.0
14	66.3	54.5	0	0.0	-19,870	0.0	-19,870	0.0	-19,870	0.0	-19,870	0.0
15	68.7	55.7	0	0.0	-11,685	0.0	-11,685	0.0	-11,685	0.0	-11,685	0.0
16	69.5	56.1	0	0.0	-7,046	0.0	-7,046	0.0	-7,046	0.0	-7,046	0.0
17	69.2	55.8	0	1.6	-5,799	0.0	-5,799	0.0	-5,799	0.0	-5,799	0.0
18	68.3	57.0	0	1.0	-10,719	0.0	-10,719	0.0	-10,719	0.0	-10,719	0.0
19	66.9	59.4	0	0.2	-13,358	0.0	-13,358	0.0	-13,358	0.0	-13,358	0.0
20	65.0	59.4	0	0.0	-16,522	0.0	-16,522	0.0	-16,522	0.0	-16,522	0.0
21	62.8	58.2	0	0.0	-17,480	0.0	-17,480	0.0	-17,480	0.0	-17,480	0.0
22	60.2	56.1	0	0.0	-22,128	0.0	-22,128	0.0	-22,128	0.0	-22,128	0.0
23	57.5	54.0	0	0.0	-24,342	0.0	-24,342	0.0	-24,342	0.0	-24,342	0.0
24	54.7	51.7	0	0.0	-28,809	0.0	-28,809	0.0	-28,809	0.0	-28,809	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-40,268	0.0	-53,347	0.0	-81,641	0.0	-81,641	0.0	-81,641	0.0
2	43.2	41.1	-43,437	0.0	-56,621	0.0	-88,284	0.0	-88,284	0.0	-88,284	0.0
3	41.8	39.8	-46,789	0.0	-59,627	0.0	-93,814	0.0	-93,814	0.0	-93,814	0.0
4	40.7	38.7	-73,191	0.0	-62,582	0.0	-99,304	0.0	-99,304	0.0	-99,304	0.0
5	40.1	38.4	-82,010	0.0	-64,951	0.0	-103,485	0.0	-103,485	0.0	-103,485	0.0
6	39.9	38.4	-84,613	0.0	-99,300	0.0	-107,515	0.0	-107,515	0.0	-107,515	0.0
7	40.5	39.0	-85,731	0.0	-111,767	0.0	-111,767	0.0	-111,767	0.0	-111,767	0.0
8	42.2	40.7	-85,029	0.0	-111,613	0.0	-111,613	0.0	-111,613	0.0	-111,613	0.0
9	44.9	43.4	-71,912	0.0	-103,386	0.0	-103,386	0.0	-103,386	0.0	-103,386	0.0
10	48.2	45.8	-48,593	0.0	-87,892	0.0	-87,892	0.0	-87,892	0.0	-87,892	0.0
11	51.7	48.3	-33,048	0.0	-68,072	0.0	-68,072	0.0	-68,072	0.0	-68,072	0.0
12	55.0	50.7	-22,250	0.0	-49,195	0.0	-49,195	0.0	-49,195	0.0	-49,195	0.0
13	57.7	52.0	-14,850	0.0	-41,440	0.0	-41,440	0.0	-41,440	0.0	-41,440	0.0
14	59.5	52.6	-5,786	0.0	-34,175	0.0	-34,175	0.0	-34,175	0.0	-34,175	0.0
15	60.1	52.7	0	0.0	-28,368	0.0	-28,368	0.0	-28,368	0.0	-28,368	0.0
16	59.9	52.6	0	0.0	-24,655	0.0	-24,655	0.0	-24,655	0.0	-24,655	0.0
17	59.2	52.1	0	0.0	-25,481	0.0	-25,481	0.0	-25,481	0.0	-25,481	0.0
18	58.2	51.8	0	0.0	-30,031	0.0	-30,031	0.0	-30,031	0.0	-30,031	0.0
19	56.8	52.2	-818	0.0	-33,915	0.0	-33,915	0.0	-33,915	0.0	-33,915	0.0
20	55.0	51.4	-17,316	0.0	-36,799	0.0	-36,799	0.0	-36,799	0.0	-36,799	0.0
21	53.1	50.1	-23,070	0.0	-39,363	0.0	-39,363	0.0	-39,363	0.0	-39,363	0.0
22	51.0	48.1	-28,314	0.0	-43,520	0.0	-43,520	0.0	-43,520	0.0	-43,520	0.0
23	48.9	46.2	-32,674	0.0	-66,935	0.0	-66,935	0.0	-66,935	0.0	-66,935	0.0
24	46.9	44.1	-36,602	0.0	-73,640	0.0	-73,640	0.0	-73,640	0.0	-73,640	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORPS OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29719 (4 BUILDINGS)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect

 AUGUSTA

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings

 APR OCT

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room

 CLTD-CLF TETD-TA1 0AHIGH ACTUAL ACTUAL MED-RCR YES

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	BUILDING 29719

-----CARD 20-- General Room Parameters-----

	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	

 1 1 OFFICE AREA 209.25 20.75 2 0 13

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	STORAGE	209.25	35	2	0		13			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50					HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				182			
2	1	YES				182			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	20.75	12		8	270			
1	2	209.25	12		8	0			
1	3	20.75	12		6	90			
2	1	35	12		6	90			
2	2	209.25	12		6	180			
2	3	35	12		6	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	54.2	10	1	1.03	.87					
2	2	4	3.5	20	1.03	.87					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 26-- Schedules -----

Room	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	Minimum	Fans	Fan	Fan	Exhaust	Controls
2	FGHEAT	FGHEAT	YES	YES		

-----CARD 27-- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Ballast	Percent	--- Daylighting ---
Number	Value	Units	Sensible	Latent	Value	Units	Fixture Type	Factor	Lights to Ret. Air	Reference Point 1 Reference Point 2
1	21	PEOPLE	255	255	8600	WATTS	SUSFLUOR			
2		PEOPLE	315	435	11000	WATTS	SUSFLUOR			

-----CARD 28-- Miscellaneous Equipment -----

Room	Misc	Equipment	Equipment	Energy	Energy	Energy	Percent	Percent	Percent		
Number	Number	Descr	Value	Units	Schedule Code	Meter Code	of Load Sensible	Misc. Load to Room	Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	ALL P.C.'S	18.2	KW	FGHEAT						
1	2	ALL PRINTERS	1.5	KW	FGHEAT						
1	3	COPIER	3.8	KW	FGHEAT						
1	4	FRIG	2.6	KW	FGHEAT						
1	5	MISS.	6	KW	FGHEAT						

-----CARD 29-- Room Airflows -----

Room	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
Number	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
Number	Value	Units	Value	Units	Value	Units	Value	Units		
1	1	CFM-SF	1	CFM-SF						
2	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 40--- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----

System	Set	System	Ventil	Deck	Cooling	Heating	Cooling	Heating	Fan
Number	Type	Location	SADBvh	SADBvh	Schedule	Schedule	Pressure		
1	FC								
2	UH								

-----CARD 41-- Zone Assignment -----

System	Set	Ref #1	Ref #2	Ref #3	Ref #4	Ref #5	Ref #6
Number	Begin	End	Begin	End	Begin	End	Begin
1	1	1					
2	2	2					

-----CARD 42--- Fan SP and Duct Parameters-----

System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path
1											
2											

-----CARD 48-- Cooling Capacity Overrides -----

System	Set	People	Lights	Misc	-----MAIN COOLING-----				---AUX COOLING---	
Number	Variance	Variance	Variance	Value	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity
					Units	Sizing	Location	Value	Units	
1				75						
2				75						

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

FC FAN COIL
UH UNIT HEATERS

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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*****  
*****  
**                                     **  
**          T R A C E    6 0 0    A N A L Y S I S          **  
**                                     **  
**          by              **  
**                                     **  
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ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 21707 (17 BUILDINGS)

Weather File Code: AUGUSTA.
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 20:52:19 8/12/94
Dataset Name: FGTYPS4A .TM

AIRFLOW - ALTERNATIVE 1
ENLISTED BARRACKS

----- S Y S T E M S U M M A R Y -----
(Design Airflow Quantities)

System Number	System Type	----- Main -----					Auxil. Supply Airflow (Cfm)	Room Exhaust Airflow (Cfm)
		Outside Airflow (Cfm)	Cooling Airflow (Cfm)	Heating Airflow (Cfm)	Return Airflow (Cfm)	Exhaust Airflow (Cfm)		
1 FC		1,710	61,167	61,167	63,206	3,749	0	0
Totals		1,710	61,167	61,167	63,206	3,749	0	0

ENGINEERING CHECKS - ALTERNATIVE 1
ENLISTED BARRACKS

----- E N G I N E E R I N G C H E C K S -----

System Number	Main/ Auxiliary	System Type	Percent Outside Air	----- Cooling -----				--- Heating ---		Floor Area Sq Ft
				Cfm/ Sq Ft	Cfm/ Ton	Sq Ft /Ton	Btuh/ Sq Ft	Cfm/ Sq Ft	Btuh/ Sq Ft	
1	Main	FC	2.80	1.46	649.9	446.3	26.89	1.46	-25.05	42,000

CAPACITY - ALTERNATIVE 1
ENLISTED BARRACKS

----- S Y S T E M S U M M A R Y -----
(Design Capacity Quantities)

		----- Cooling -----				----- Heating -----						
System	System	Main Sys.	Aux. Sys.	Opt. Vent	Cooling	Main Sys.	Aux. Sys.	Preheat	Reheat	Humidif.	Opt. Vent	Heating
Number	Type	Capacity	Capacity	Capacity	Totals	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity	Totals
		(Tons)	(Tons)	(Tons)	(Tons)	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(Btuh)
1	FC	94.1	0.0	0.0	94.1	-1,051,929	0	0	0	0	0	-1,051,929
Totals		94.1	0.0	0.0	94.1	-1,051,929	0	0	0	0	0	-1,051,929

The building peaked at hour 19 month 6 with a capacity of 94.1 tons

System 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==> Mo/Hr: 6/19 * Mo/Hr: 6/19 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 93/ 72/ 84.0 * OADB: 93 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	267,004	0		267,004	23.64	*	267,004	26.31	*	-265,823	-265,823	25.27
Glass Solar	101,850	0		101,850	9.02	*	101,850	10.04	*	0	0	0.00
Glass Cond	78,050	0		78,050	6.91	*	78,050	7.69	*	-206,454	-206,454	19.63
Wall Cond	297,436	0		297,436	26.34	*	297,436	29.31	*	-392,511	-392,511	37.31
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	53,708			53,708	4.76	*	32,386	3.19	*	-101,771	-101,771	9.67
Sub Total==>	798,048	0		798,048	70.66	*	776,725	76.55	*	-966,558	-966,558	91.88
Internal Loads						*			*			
Lights	100,916	0		100,916	8.94	*	100,916	9.95	*	0	0	0.00
People	57,980			57,980	5.13	*	20,930	2.06	*	0	0	0.00
Misc	116,110	0	0	116,110	10.28	*	116,110	11.44	*	0	0	0.00
Sub Total==>	275,006	0	0	275,006	24.35	*	237,956	23.45	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	56,316	4.99	*	0	0.00	*	0	-85,371	8.12
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	1,073,054	0	0	1,129,370	100.00	*	1,014,682	100.00	*	-966,558	-1,051,929	100.00

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR		
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F
Main Clg	94.1	1,129.4	1,048.6	61,167	75.5	62.8	65.8	60.0	56.7
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0
Totals	94.1	1,129.4							

-----AREAS-----

	Gross Total	Glass (sf)	(%)
Floor	42,000		
Part	0		
ExFlr	0		
Roof	14,000	0	0
Wall	20,385	4,074	20

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg
	(Mbh)	(cfm)	Deg F	Deg F
Main Htg	-1,051.9	61,167	66.7	82.2
Aux Htg	0.0	0	0.0	0.0
Preheat	-0.0	61,167	66.7	60.0
Reheat	0.0	0	0.0	0.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-1,051.9			

-----AIRFLOWS (cfm)-----

	Type	Cooling	Heating
	Vent	1,710	1,710
	Infil	1,631	2,038
	Supply	61,167	61,167
	Mincfm	0	0
	Return	61,167	61,167
	Exhaust	1,710	1,710
	Rm Exh	0	0
	Auxil	0	0

-----ENGINEERING CHECKS-----

Clg % OA	2.8
Clg Cfm/Sqft	1.46
Clg Cfm/Ton	649.93
Clg Sqft/Ton	446.27
Clg Btuh/Sqft	26.89
No. People	114
Htg % OA	2.8
Htg Cfm/Sqft	1.46
Htg Btuh/Sqft	-25.05

-----TEMPERATURES (F)-----

Type	Clg	Htg
SADB	60.0	82.2
Plenum	75.0	68.0
Return	75.0	68.0
Ret/OA	75.5	66.7
Runarnd	75.0	68.0
Fn MtrTD	0.0	0.0
Fn BldTD	0.0	0.0
Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-918,579	0.0	-280,210	0.0	-174,014	0.0	-174,014	0.0	-484,294	0.0
2	32.9	30.7	-574,920	0.0	-522,704	0.0	-206,018	0.0	-206,018	0.0	-522,704	0.0
3	33.1	31.3	-338,484	0.0	-549,330	0.0	-227,378	0.0	-227,378	0.0	-549,330	0.0
4	33.9	32.1	-380,766	0.0	-581,064	0.0	-254,703	0.0	-254,703	0.0	-581,064	0.0
5	35.2	33.5	-413,447	0.0	-605,266	0.0	-275,178	0.0	-275,178	0.0	-605,266	0.0
6	37.0	35.4	-263,281	0.0	-432,139	0.0	-284,310	0.0	-284,310	0.0	-432,139	0.0
7	39.0	37.6	-244,394	0.0	-411,383	0.0	-285,759	0.0	-285,759	0.0	-411,383	0.0
8	41.3	40.1	-246,940	0.0	-396,476	0.0	-286,761	0.0	-286,761	0.0	-396,476	0.0
9	43.7	42.5	-291,740	0.0	-474,913	0.0	-263,585	0.0	-263,585	0.0	-474,913	0.0
10	46.1	44.0	-244,809	0.0	-449,116	0.0	-222,336	0.0	-222,336	0.0	-449,116	0.0
11	48.4	45.0	-201,397	0.0	-409,273	0.0	-168,961	0.0	-168,961	0.0	-409,273	0.0
12	50.5	45.6	-134,181	0.0	-381,945	0.0	-132,270	0.0	-132,270	0.0	-381,945	0.0
13	52.2	46.1	-71,813	0.0	-341,590	0.0	-80,380	0.0	-80,380	0.0	-341,590	0.0
14	53.5	46.4	-17,786	0.0	-295,066	0.0	-24,651	0.0	-24,651	0.0	-295,066	0.0
15	54.3	46.3	0	0.0	-255,134	0.0	0	0.0	0	0.0	-255,134	0.0
16	54.6	46.1	0	0.0	-217,778	0.0	0	0.0	0	0.0	-217,778	0.0
17	54.0	45.9	0	0.0	-188,250	0.0	0	0.0	0	0.0	-188,250	0.0
18	52.5	45.0	0	0.0	-77,659	0.0	0	0.0	0	0.0	-77,659	0.0
19	50.1	44.8	0	0.0	-62,725	0.0	0	0.0	0	0.0	-62,725	0.0
20	47.1	43.3	0	3.1	-85,217	0.0	0	0.0	0	0.0	-85,217	0.0
21	43.7	40.4	0	7.0	-95,948	0.0	0	0.0	0	0.0	-95,948	0.0
22	40.4	37.3	0	0.0	-327,534	0.0	0	0.0	0	0.0	-327,534	0.0
23	37.3	34.9	0	0.0	-380,253	0.0	0	0.0	0	0.0	-380,253	0.0
24	34.9	32.6	0	0.0	-435,188	0.0	-57,014	0.0	-57,014	0.0	-435,188	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-209,460	0.0	-104,490	0.0	-96,348	0.0	-76,740	0.0	-387,020	0.0
2	39.7	37.1	-256,564	0.0	-439,168	0.0	-122,481	0.0	-122,481	0.0	-439,168	0.0
3	37.8	35.1	-306,725	0.0	-484,116	0.0	-162,166	0.0	-162,166	0.0	-484,116	0.0
4	36.3	33.8	-335,659	0.0	-504,190	0.0	-177,830	0.0	-177,830	0.0	-504,190	0.0
5	35.1	32.6	-380,491	0.0	-548,226	0.0	-218,137	0.0	-218,137	0.0	-548,226	0.0
6	34.4	32.0	-223,443	0.0	-391,054	0.0	-243,224	0.0	-243,224	0.0	-391,054	0.0
7	34.1	31.9	-204,739	0.0	-390,100	0.0	-264,475	0.0	-264,475	0.0	-390,100	0.0
8	34.6	32.4	-201,553	0.0	-389,025	0.0	-279,313	0.0	-279,313	0.0	-389,025	0.0
9	36.0	33.8	-253,338	0.0	-462,739	0.0	-274,056	0.0	-274,056	0.0	-462,739	0.0
10	38.2	34.7	-222,147	0.0	-449,580	0.0	-248,708	0.0	-248,708	0.0	-449,580	0.0
11	40.9	36.2	-175,367	0.0	-437,010	0.0	-225,752	0.0	-225,752	0.0	-437,010	0.0
12	43.9	37.4	-131,672	0.0	-416,218	0.0	-194,231	0.0	-194,231	0.0	-416,218	0.0
13	46.9	39.4	-86,283	0.0	-386,948	0.0	-147,139	0.0	-147,139	0.0	-386,948	0.0
14	49.7	41.4	-24,982	0.0	-343,395	0.0	-90,271	0.0	-90,271	0.0	-343,395	0.0
15	51.8	42.8	0	0.0	-308,715	0.0	-46,284	0.0	-46,284	0.0	-308,715	0.0
16	53.2	43.9	0	0.0	-274,227	0.0	-7,196	0.0	-7,196	0.0	-274,227	0.0
17	53.7	44.2	0	0.0	-242,929	0.0	0	0.0	0	0.0	-242,929	0.0
18	53.4	44.4	0	0.0	-106,115	0.0	0	0.0	0	0.0	-106,115	0.0
19	52.7	44.4	0	0.0	-84,228	0.0	0	0.0	0	0.0	-84,228	0.0
20	51.5	45.2	0	5.0	-81,723	0.0	0	0.0	0	0.0	-81,723	0.0
21	50.0	44.6	0	10.6	-79,802	0.0	0	0.0	0	0.0	-79,802	0.0
22	48.1	43.3	0	0.0	-273,351	0.0	0	0.0	0	0.0	-273,351	0.0
23	46.1	41.8	0	0.0	-324,866	0.0	0	0.0	0	0.0	-324,866	0.0
24	43.9	40.1	0	0.0	-362,859	0.0	0	0.0	0	0.0	-362,859	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	0	0.0	0	0.0	0	0.0	0	9.5	0	0.0
2	48.7	44.6	0	0.0	0	0.0	0	0.0	0	6.1	0	0.0
3	46.6	42.9	0	0.0	0	0.0	0	0.0	0	3.1	0	0.0
4	44.9	41.4	-14,848	0.0	-166,540	0.0	0	0.0	-6,156	0.0	-166,540	0.0
5	43.9	40.8	-107,007	0.0	-293,335	0.0	0	0.0	-27,431	0.0	-293,335	0.0
6	43.5	40.8	0	0.0	-151,185	0.0	0	0.0	0	0.0	-151,185	0.0
7	44.0	41.4	0	0.0	-144,870	0.0	0	0.0	0	0.0	-144,870	0.0
8	45.4	42.7	0	0.0	-143,037	0.0	0	0.0	0	0.0	-143,037	0.0
9	47.7	44.3	0	0.0	-240,209	0.0	0	0.0	0	0.0	-240,209	0.0
10	50.6	45.8	0	0.0	-239,147	0.0	0	0.0	0	0.0	-239,147	0.0
11	53.9	47.4	0	0.0	-211,993	0.0	0	0.0	0	0.0	-211,993	0.0
12	57.4	49.0	0	0.0	-189,021	0.0	0	0.0	0	0.0	-189,021	0.0
13	60.7	50.8	0	0.0	-144,601	0.0	0	0.0	0	0.0	-144,601	0.0
14	63.6	52.7	0	0.0	-113,707	0.0	0	0.0	0	0.0	-113,707	0.0
15	65.9	53.7	0	0.0	-75,199	0.0	0	6.4	0	9.6	-75,199	0.0
16	67.3	54.4	0	8.1	-33,836	0.0	0	18.1	0	18.1	-33,836	0.0
17	67.8	54.6	0	21.8	0	0.0	0	21.0	0	21.0	0	0.0
18	67.4	54.8	0	38.9	0	0.0	0	22.3	0	22.3	0	0.0
19	66.4	55.2	0	37.7	0	0.0	0	23.0	0	23.0	0	0.0
20	64.7	56.0	0	36.7	0	0.0	0	21.9	0	21.9	0	0.0
21	62.5	56.0	0	34.4	0	0.0	0	19.8	0	19.8	0	0.0
22	60.0	54.1	0	15.2	0	0.0	0	18.0	0	18.0	0	0.0
23	57.1	51.9	0	10.5	0	0.0	0	16.1	0	16.2	0	0.0
24	54.2	49.4	0	4.5	0	0.0	0	12.4	0	12.4	0	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.7	0	26.5	0	26.6	0	0.7
2	58.9	54.9	0	9.6	-22,807	0.0	0	24.5	0	24.6	-22,807	0.0
3	57.0	53.5	0	11.3	0	0.0	0	20.9	0	20.9	0	0.0
4	55.4	52.4	0	8.4	0	0.0	0	18.9	0	18.9	0	0.0
5	54.2	51.4	0	4.8	0	0.0	0	15.5	0	15.5	0	0.0
6	53.5	50.9	0	17.4	0	0.0	0	13.7	0	13.8	0	0.0
7	53.2	51.1	0	18.2	0	0.0	0	10.8	0	10.9	0	0.0
8	53.9	51.5	0	20.4	0	0.0	0	10.4	0	10.4	0	0.0
9	55.9	52.1	0	9.3	0	0.0	0	10.6	0	10.6	0	0.0
10	58.9	53.2	0	10.9	0	0.0	0	12.8	0	12.8	0	0.0
11	62.6	55.2	0	12.5	0	0.0	0	15.5	0	15.5	0	0.0
12	66.5	57.3	0	15.9	0	0.0	0	19.3	0	19.3	0	0.0
13	70.2	59.6	0	19.8	0	0.0	0	24.0	0	24.0	0	0.0
14	73.2	61.0	0	24.5	0	0.0	0	28.4	0	28.4	0	0.0
15	75.2	62.2	0	29.1	0	0.0	0	32.3	0	32.3	0	0.0
16	75.9	62.2	0	32.6	0	0.0	0	35.0	0	35.0	0	0.0
17	75.6	62.0	0	35.0	0	0.0	0	38.3	0	38.6	0	0.0
18	74.9	61.7	0	55.1	0	22.0	0	39.6	0	39.9	0	22.0
19	73.7	62.0	0	55.2	0	28.5	0	39.8	0	39.9	0	28.5
20	72.1	62.4	0	54.2	0	29.5	0	40.0	0	40.0	0	29.6
21	70.2	63.3	0	51.9	0	28.5	0	38.3	0	38.3	0	28.6
22	68.0	62.5	0	33.8	0	12.4	0	37.0	0	37.1	0	12.5
23	65.7	60.5	0	28.7	0	8.6	0	34.0	0	34.0	0	8.6
24	63.4	58.5	0	24.2	0	4.7	0	30.2	0	30.2	0	4.7

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

May			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	35.4	0	15.8	0	46.9	0	44.5	0	15.8
2	65.7	61.5	0	31.1	0	12.4	0	41.5	0	41.2	0	12.4
3	63.6	59.7	0	26.4	0	8.6	0	36.9	0	36.8	0	8.6
4	61.8	58.4	0	23.5	0	4.7	0	32.6	0	32.5	0	4.7
5	60.5	57.1	0	19.8	0	1.1	0	28.7	0	28.7	0	1.1
6	59.7	56.5	0	32.5	0	13.9	0	26.3	0	26.3	0	13.9
7	59.4	56.5	0	34.2	0	13.5	0	24.1	0	24.1	0	13.6
8	60.1	56.3	0	36.1	0	14.6	0	23.8	0	23.8	0	14.6
9	62.4	56.3	0	23.3	0	3.3	0	23.5	0	23.5	0	3.3
10	65.7	57.2	0	24.6	0	4.0	0	26.0	0	26.0	0	4.0
11	69.9	58.9	0	26.3	0	5.8	0	29.8	0	29.8	0	5.8
12	74.3	60.9	0	30.3	0	8.7	0	34.8	0	34.8	0	8.7
13	78.5	63.7	0	34.2	0	11.1	0	39.0	0	39.0	0	11.1
14	81.9	65.3	0	38.7	0	14.3	0	43.8	0	43.8	0	14.3
15	84.1	66.9	0	43.4	0	18.4	0	51.1	0	51.1	0	18.4
16	84.9	67.1	0	47.1	0	20.8	0	54.3	0	54.3	0	20.8
17	84.6	67.3	0	49.8	0	22.6	0	56.5	0	56.5	0	22.7
18	83.8	67.1	0	79.9	0	42.5	0	58.3	0	58.3	0	42.6
19	82.4	67.5	0	77.0	0	45.7	0	60.2	0	60.2	0	45.8
20	80.6	68.9	0	73.8	0	45.7	0	58.9	0	58.9	0	46.0
21	78.5	71.0	0	71.3	0	46.7	0	59.2	0	59.2	0	47.2
22	76.1	69.9	0	50.9	0	28.2	0	57.4	0	57.4	0	28.2
23	73.4	68.0	0	45.7	0	24.2	0	53.0	0	53.0	0	24.2
24	70.8	65.5	0	40.1	0	20.1	0	48.9	0	48.9	0	20.1

June			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	58.9	0	29.1	0	67.5	0	61.4	0	29.1
2	72.6	68.4	0	49.2	0	24.7	0	55.3	0	56.4	0	24.7
3	70.9	67.3	0	46.7	0	21.0	0	52.9	0	52.8	0	21.0
4	69.6	66.5	0	41.5	0	18.2	0	49.8	0	49.8	0	18.2
5	68.7	65.8	0	38.8	0	14.4	0	45.3	0	45.3	0	14.4
6	68.5	65.7	0	56.3	0	28.8	0	43.1	0	43.1	0	28.6
7	69.0	66.3	0	56.0	0	29.3	0	42.3	0	42.3	0	29.3
8	70.6	66.9	0	59.5	0	31.5	0	43.5	0	43.5	0	31.5
9	73.0	67.7	0	36.8	0	17.5	0	45.2	0	45.2	0	17.5
10	76.1	68.1	0	37.8	0	18.0	0	49.3	0	49.3	0	18.0
11	79.5	69.1	0	40.3	0	19.9	0	53.0	0	53.0	0	19.9
12	82.9	70.1	0	44.2	0	22.3	0	57.6	0	57.6	0	22.3
13	86.0	71.0	0	49.0	0	25.4	0	62.5	0	62.5	0	25.4
14	88.4	72.5	0	52.5	0	29.0	0	68.6	0	68.6	0	29.0
15	90.0	74.0	0	55.9	0	31.6	0	72.8	0	72.8	0	31.6
16	90.5	73.7	0	59.5	0	34.9	0	75.5	0	75.5	0	34.9
17	90.3	74.2	0	61.0	0	36.0	0	76.9	0	76.9	0	36.0
18	89.4	73.9	0	94.1	0	64.7	0	79.3	0	79.3	0	64.7
19	88.1	74.5	0	94.1	0	65.6	0	80.0	0	80.0	0	65.6
20	86.4	75.3	0	94.1	0	65.3	0	77.7	0	77.7	0	65.3
21	84.3	76.5	0	90.6	0	64.5	0	75.8	0	75.8	0	64.5
22	81.9	75.7	0	66.8	0	43.5	0	73.8	0	73.8	0	43.5
23	79.5	74.0	0	65.4	0	40.2	0	70.2	0	70.2	0	40.2
24	77.0	72.1	0	59.9	0	36.9	0	66.9	0	66.9	0	36.9

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	57.5	0	24.0	0	61.7	0	56.1	0	24.0
2	72.4	69.4	0	47.9	0	21.3	0	53.3	0	53.9	0	21.3
3	71.3	68.4	0	45.2	0	17.4	0	49.1	0	49.1	0	17.4
4	70.5	67.7	0	39.9	0	15.2	0	47.0	0	47.0	0	15.2
5	70.0	67.4	0	37.4	0	12.6	0	44.2	0	44.2	0	12.6
6	69.9	67.5	0	56.4	0	28.6	0	42.1	0	42.1	0	28.4
7	70.3	68.0	0	56.2	0	28.0	0	41.2	0	41.2	0	28.0
8	71.7	69.0	0	59.3	0	30.7	0	43.0	0	43.0	0	30.7
9	73.7	69.5	0	35.7	0	15.3	0	45.0	0	45.0	0	15.3
10	76.2	70.6	0	36.0	0	15.9	0	48.7	0	48.7	0	15.9
11	78.9	71.8	0	38.0	0	18.2	0	53.1	0	53.1	0	18.2
12	81.4	73.0	0	40.7	0	20.7	0	58.0	0	58.0	0	20.7
13	83.4	74.4	0	45.5	0	23.9	0	62.9	0	62.9	0	23.9
14	84.8	74.8	0	48.8	0	26.2	0	65.9	0	65.9	0	26.2
15	85.2	75.0	0	52.8	0	29.6	0	70.4	0	70.4	0	29.6
16	85.1	75.0	0	54.7	0	30.9	0	72.4	0	72.4	0	30.9
17	84.6	74.7	0	57.0	0	32.5	0	73.4	0	73.4	0	32.5
18	83.8	74.6	0	90.0	0	61.5	0	75.5	0	75.5	0	61.5
19	82.7	74.6	0	90.9	0	61.0	0	75.2	0	75.2	0	61.0
20	81.4	74.4	0	88.9	0	61.2	0	73.7	0	73.7	0	61.2
21	79.9	74.9	0	87.7	0	60.1	0	71.6	0	71.6	0	60.1
22	78.4	74.0	0	64.1	0	36.5	0	67.3	0	67.3	0	36.5
23	76.8	72.7	0	61.9	0	34.5	0	64.6	0	64.6	0	34.5
24	75.2	71.6	0	57.9	0	31.5	0	61.5	0	61.5	0	31.5

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	55.9	0	26.4	0	66.2	0	59.9	0	26.4
2	73.2	70.3	0	45.8	0	22.1	0	52.9	0	54.1	0	22.1
3	71.7	68.9	0	41.4	0	19.8	0	52.2	0	52.2	0	19.7
4	70.4	67.8	0	38.5	0	15.9	0	47.4	0	47.4	0	15.8
5	69.5	66.8	0	35.5	0	13.7	0	45.4	0	45.4	0	13.7
6	68.9	66.4	0	54.2	0	29.9	0	42.4	0	42.4	0	29.5
7	68.7	66.4	0	51.6	0	25.9	0	38.6	0	38.6	0	25.9
8	69.2	66.8	0	55.0	0	27.8	0	40.1	0	40.1	0	27.8
9	70.8	67.7	0	32.9	0	13.7	0	41.3	0	41.3	0	13.7
10	73.2	67.7	0	33.0	0	14.5	0	44.0	0	44.0	0	14.5
11	76.2	68.8	0	35.5	0	16.3	0	48.2	0	48.2	0	16.3
12	79.3	70.3	0	39.5	0	18.7	0	52.7	0	52.7	0	18.7
13	82.3	72.2	0	43.6	0	21.6	0	58.4	0	58.4	0	21.6
14	84.7	73.7	0	47.2	0	25.2	0	63.6	0	63.6	0	25.2
15	86.3	74.6	0	51.9	0	28.7	0	68.3	0	68.3	0	28.7
16	86.8	75.1	0	56.0	0	31.1	0	71.8	0	71.8	0	31.1
17	86.6	75.1	0	57.3	0	33.4	0	73.7	0	73.7	0	33.4
18	86.0	75.3	0	88.6	0	62.1	0	76.1	0	76.1	0	62.1
19	85.1	76.0	0	88.9	0	61.4	0	75.5	0	75.5	0	61.4
20	83.8	76.8	0	87.7	0	61.7	0	74.2	0	74.2	0	61.7
21	82.3	77.2	0	86.0	0	61.3	0	72.9	0	72.9	0	61.3
22	80.6	76.3	0	62.4	0	39.3	0	70.8	0	70.8	0	39.3
23	78.7	75.3	0	59.8	0	36.6	0	66.3	0	66.3	0	36.6
24	76.8	73.7	0	55.6	0	33.1	0	63.0	0	63.0	0	33.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

September			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	69.6	67.4		0	37.8		0	14.8		0	50.7		0	45.0		0	14.8
2	67.6	65.0		0	31.0		0	10.3		0	39.7		0	39.9		0	10.3
3	65.8	63.4		0	26.4		0	7.6		0	37.2		0	37.3		0	7.6
4	64.3	62.2		0	23.5		0	4.2		0	33.6		0	33.6		0	4.2
5	63.1	61.1		0	19.9		0	1.8		0	31.2		0	31.2		0	1.8
6	62.4	60.3		0	34.3		0	13.5		0	26.7		0	26.7		0	13.5
7	62.2	60.2		0	33.9		0	13.8		0	25.3		0	25.3		0	13.8
8	62.9	60.9		0	38.4		0	14.0		0	24.3		0	24.3		0	14.0
9	64.7	61.8		0	22.0		0	3.4		0	25.6		0	25.6		0	3.5
10	67.6	62.1		0	24.2		0	3.8		0	28.2		0	28.2		0	3.8
11	71.1	63.1		0	26.0		0	6.3		0	33.1		0	33.1		0	6.3
12	74.8	64.6		0	29.1		0	8.6		0	37.2		0	37.2		0	8.6
13	78.3	66.7		0	36.3		0	12.0		0	44.0		0	44.0		0	12.0
14	81.2	68.4		0	41.2		0	14.7		0	48.3		0	48.3		0	14.7
15	83.0	70.0		0	45.2		0	18.5		0	54.5		0	54.5		0	18.5
16	83.7	70.5		0	48.8		0	21.5		0	58.4		0	58.4		0	21.5
17	83.4	70.5		0	50.7		0	23.3		0	60.4		0	60.4		0	23.3
18	82.8	70.9		0	78.4		0	46.3		0	61.5		0	61.5		0	46.5
19	81.6	72.7		0	75.1		0	48.7		0	62.6		0	62.6		0	48.7
20	80.1	74.7		0	74.2		0	48.4		0	61.1		0	61.1		0	48.4
21	78.3	74.1		0	72.3		0	48.4		0	60.0		0	60.0		0	48.4
22	76.3	72.4		0	48.8		0	26.1		0	56.8		0	56.8		0	26.1
23	74.1	70.7		0	44.6		0	21.8		0	51.8		0	51.8		0	21.8
24	71.8	68.9		0	40.1		0	18.7		0	48.9		0	48.9		0	18.7

October			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	52.2	50.5		0	3.0		0	0.0	-13,546	0.0		0	12.2		0	0.0	
2	50.1	48.6	-18,309		0.0		0	0.0		8.8		0	8.9		0	0.0	
3	48.4	46.9		0	0.0		0	0.0		6.8		0	6.9		0	0.0	
4	47.1	45.8		0	0.0	-24,247		0.0		3.6		0	3.7	-24,247		0.0	
5	46.3	44.8		0	0.0	-259,138		0.0		0.6		0	0.6	-259,138		0.0	
6	46.0	44.5		0	0.0	-120,462		0.0	-36,513	0.0		-36,513	0.0	-120,462		0.0	
7	46.8	45.3		0	0.0	-113,705		0.0	-51,666	0.0		-51,666	0.0	-113,705		0.0	
8	48.9	47.5		0	0.0	-92,216		0.0	-46,171	0.0		-46,171	0.0	-92,216		0.0	
9	52.2	49.9		0	0.0	-194,500		0.0	-25,430	0.0		-25,430	0.0	-194,500		0.0	
10	56.2	52.5		0	0.0	-170,910		0.0		1.7		0	1.7	-170,910		0.0	
11	60.4	54.4		0	0.0	-143,507		0.0		5.6		0	5.6	-143,507		0.0	
12	64.4	56.0		0	0.0	-98,547		0.0		10.8		0	10.8	-98,547		0.0	
13	67.7	57.3		0	11.1	-55,198		0.0		15.6		0	15.6	-55,198		0.0	
14	69.8	58.2		0	17.2	-12,635		0.0		20.1		0	20.1	-12,635		0.0	
15	70.6	58.1		0	22.1		0	0.0		24.9		0	24.9		0	0.0	
16	70.3	57.5		0	26.9		0	0.0		28.1		0	28.1		0	0.0	
17	69.5	57.3		0	28.2		0	0.0		29.3		0	29.3		0	0.0	
18	68.2	57.7		0	43.9		0	0.0		29.3		0	29.3		0	0.0	
19	66.5	60.6		0	41.7		0	0.0		28.7		0	28.8		0	0.0	
20	64.4	60.8		0	39.5		0	9.7		26.9		0	26.9		0	9.8	
21	62.1	59.4		0	36.4		0	15.7		24.1		0	24.2		0	15.8	
22	59.6	57.3		0	18.0	-10,855		0.0		22.1		0	22.1	-10,855		0.0	
23	57.0	55.1		0	11.6		0	0.0		19.0		0	19.1		0	0.0	
24	54.5	52.7		0	7.1		0	0.0		15.6		0	15.6		0	0.0	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

November			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	52.0	49.2		0		0.0		0		0.0		0		0.0		0		8.7		0		0.0
2	49.4	47.3		0		0.0		0		0.0		0		0.0		0		5.2		0		0.0
3	47.2	45.3		0		0.0		0		0.0		0		0.0		0		1.9		0		0.0
4	45.3	43.4		0		0.0		-196,194		0.0		0		0.0		-3,696		0.0		-196,196		0.0
5	43.9	42.2		0		0.0		-306,320		0.0		0		0.0		-39,655		0.0		-306,320		0.0
6	43.0	41.4		0		0.0		-159,722		0.0		0		0.0		0		0.0		-159,722		0.0
7	42.7	41.2		0		0.0		-158,224		0.0		0		0.0		0		0.0		-158,224		0.0
8	43.5	42.0		0		0.0		-168,154		0.0		0		0.0		0		0.0		-168,154		0.0
9	45.9	44.0		-12,314		0.0		-258,116		0.0		0		0.0		0		0.0		-258,116		0.0
10	49.4	46.6		-11,053		0.0		-241,010		0.0		0		0.0		0		0.0		-241,010		0.0
11	53.8	48.6		0		0.0		-212,462		0.0		0		0.0		0		0.0		-212,462		0.0
12	58.4	50.6		0		0.0		-168,593		0.0		0		0.0		0		0.0		-168,593		0.0
13	62.8	52.6		0		0.0		-126,119		0.0		0		0.0		0		0.0		-126,119		0.0
14	66.3	54.5		0		0.0		-77,468		0.0		0		0.0		0		0.0		-77,468		0.0
15	68.7	55.7		0		0.6		-29,714		0.0		0		13.4		0		18.5		-29,714		0.0
16	69.5	56.1		0		24.3		0		0.0		0		23.1		0		23.1		0		0.0
17	69.2	55.8		0		25.8		0		0.0		0		23.9		0		23.9		0		0.0
18	68.3	57.0		0		39.2		0		0.0		0		23.6		0		23.6		0		0.0
19	66.9	59.4		0		36.6		0		0.0		0		22.5		0		22.5		0		0.0
20	65.0	59.4		0		33.6		0		0.0		0		20.6		0		20.6		0		0.0
21	62.8	58.2		0		30.3		0		0.0		0		18.8		0		18.8		0		0.0
22	60.2	56.1		0		10.7		0		0.0		0		16.6		0		16.6		0		0.0
23	57.5	54.0		0		5.6		0		0.0		0		14.7		0		14.7		0		0.0
24	54.7	51.7		0		0.9		0		0.0		0		11.6		0		11.6		0		0.0

December			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	44.9	42.5		0		0.0		0		0.0		0		0.0		-55,829		0.0		0		0.0
2	43.2	41.1		0		0.0		-158,244		0.0		-25,352		0.0		-6,871		0.0		0		0.0
3	41.8	39.8		-132,018		0.0		-385,119		0.0		-63,167		0.0		0		0.0		-353,819		0.0
4	40.7	38.7		-250,246		0.0		-412,394		0.0		-86,033		0.0		0		0.0		-412,394		0.0
5	40.1	38.4		-276,991		0.0		-450,688		0.0		-120,600		0.0		0		0.0		-450,688		0.0
6	39.9	38.4		-113,884		0.0		-289,215		0.0		-141,386		0.0		0		0.0		-289,215		0.0
7	40.5	39.0		-114,225		0.0		-287,831		0.0		-162,206		0.0		-51,072		0.0		-287,831		0.0
8	42.2	40.7		-97,748		0.0		-274,185		0.0		-164,471		0.0		-164,471		0.0		-274,185		0.0
9	44.9	43.4		-166,925		0.0		-358,712		0.0		-144,355		0.0		-144,355		0.0		-358,712		0.0
10	48.2	45.8		-130,743		0.0		-338,308		0.0		-103,947		0.0		-103,947		0.0		-338,308		0.0
11	51.7	48.3		-72,450		0.0		-299,965		0.0		-48,644		0.0		-48,644		0.0		-299,965		0.0
12	55.0	50.7		0		0.0		-258,397		0.0		0		0.0		0		0.0		-258,397		0.0
13	57.7	52.0		0		0.0		-207,726		0.0		0		0.0		0		0.0		-207,726		0.0
14	59.5	52.6		0		0.0		-170,743		0.0		0		0.0		0		0.0		-170,743		0.0
15	60.1	52.7		0		0.0		-129,588		0.0		0		0.0		0		0.0		-129,588		0.0
16	59.9	52.6		0		0.0		-90,899		0.0		0		0.0		0		0.0		-90,899		0.0
17	59.2	52.1		0		0.0		-91,043		0.0		0		0.0		0		0.0		-91,043		0.0
18	58.2	51.8		0		19.7		0		0.0		0		4.1		0		4.1		0		0.0
19	56.8	52.2		0		22.7		0		0.0		0		11.1		0		11.1		0		0.0
20	55.0	51.4		0		19.9		0		0.0		0		8.1		0		8.1		0		0.0
21	53.1	50.1		0		17.2		0		0.0		0		6.0		0		6.0		0		0.0
22	51.0	48.1		-13,824		0.0		0		0.0		0		3.8		0		3.8		0		0.0
23	48.9	46.2		0		0.0		-219,744		0.0		0		0.6		0		0.6		-219,744		0.0
24	46.9	44.1		0		0.0		-265,634		0.0		-27,244		0.0		-27,244		0.0		-265,634		0.0

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ENERGY STUDY OF COOLING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 25721 (10 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 12:35:21 8/19/94
Dataset Name: FGTYPS4B .TM

System 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==> Mo/Hr: 6/17 * Mo/Hr: 6/19 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WR/HR: 98/ 74/ 91.0 * OADB: 93 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	166,413	0		166,413	22.60	*	194,364	28.61	*	-193,504	-193,504	22.30
Glass Solar	118,146	0		118,146	16.05	*	105,924	15.59	*	0	0	0.00
Glass Cond	58,523	0		58,523	7.95	*	49,255	7.25	*	-126,050	-126,050	14.53
Wall Cond	274,758	0		274,758	37.32	*	297,436	43.78	*	-392,511	-392,511	45.23
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	71,261			71,261	9.68	*	32,386	4.77	*	-101,771	-101,771	11.73
Sub Total==>	689,101	0		689,101	93.59	*	679,364	100.00	*	-813,835	-813,835	93.79
Internal Loads												
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	47,193	6.41	*	0	0.00	*	0	-53,918	6.21
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	689,101	0	0	736,294	100.00	*	679,364	100.00	*	-813,835	-867,753	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Floor		
Main Clg	61.4	736.3	687.6	43,316	75.6	62.9	65.9	60.9	57.3	64.9	30,574	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	
Totals	61.4	736.3										
										Part	0	
										ExFlr	0	
										Roof	10,191	0 0
										Wall	20,385	4.074 20

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA		Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F				Clg Cfm/Sqft				
Main Htg	-867.8	43,316	66.9	84.9	Vent	1,080	1,080	1.42	2.5	SADB	60.9	84.9
Aux Htg	0.0	0	0.0	0.0	Infil	1,631	2,038	705.96		Plenum	75.0	68.0
Preheat	-0.0	43,316	66.9	60.9	Supply	43,316	43,316	498.28		Return	75.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	24.08		Ret/OA	75.6	66.9
Humidif	0.0	0	0.0	0.0	Return	43,316	43,316	No. People	72	Runarnd	75.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	1,080	1,080	Htg % OA	2.5	Fn MtrTD	0.0	0.0
Total	-867.8				Rm Exh	0	0	Htg Cfm/Sqft	1.42	Fn BldTD	0.0	0.0
					Auxil	0	0	Htg Btuh/Sqft	-28.38	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-770,525	0.0	-416,236	0.0	-416,236	0.0	-416,236	0.0	-416,236	0.0
2	32.9	30.7	-431,570	0.0	-443,402	0.0	-443,402	0.0	-443,402	0.0	-443,402	0.0
3	33.1	31.3	-318,013	0.0	-461,922	0.0	-461,922	0.0	-461,922	0.0	-461,922	0.0
4	33.9	32.1	-351,308	0.0	-485,247	0.0	-485,247	0.0	-485,247	0.0	-485,247	0.0
5	35.2	33.5	-375,734	0.0	-503,593	0.0	-503,593	0.0	-503,593	0.0	-503,593	0.0
6	37.0	35.4	-403,840	0.0	-522,235	0.0	-522,235	0.0	-522,235	0.0	-522,235	0.0
7	39.0	37.6	-417,990	0.0	-523,554	0.0	-523,554	0.0	-523,554	0.0	-523,554	0.0
8	41.3	40.1	-421,888	0.0	-524,622	0.0	-524,622	0.0	-524,622	0.0	-524,622	0.0
9	43.7	42.5	-375,603	0.0	-499,830	0.0	-499,830	0.0	-499,830	0.0	-499,830	0.0
10	46.1	44.0	-308,989	0.0	-471,601	0.0	-471,601	0.0	-471,601	0.0	-471,601	0.0
11	48.4	45.0	-239,892	0.0	-409,811	0.0	-409,811	0.0	-409,811	0.0	-409,811	0.0
12	50.5	45.6	-156,338	0.0	-377,043	0.0	-377,043	0.0	-377,043	0.0	-377,043	0.0
13	52.2	46.1	-83,097	0.0	-330,449	0.0	-330,449	0.0	-330,449	0.0	-330,449	0.0
14	53.5	46.4	-11,437	0.0	-281,400	0.0	-281,400	0.0	-281,400	0.0	-281,400	0.0
15	54.3	46.3	0	0.0	-231,980	0.0	-231,980	0.0	-231,980	0.0	-231,980	0.0
16	54.6	46.1	0	0.0	-196,387	0.0	-196,387	0.0	-196,387	0.0	-196,387	0.0
17	54.0	45.9	0	0.0	-173,047	0.0	-173,047	0.0	-173,047	0.0	-173,047	0.0
18	52.5	45.0	0	0.0	-191,992	0.0	-191,992	0.0	-191,992	0.0	-191,992	0.0
19	50.1	44.8	0	0.0	-202,710	0.0	-202,710	0.0	-202,710	0.0	-202,710	0.0
20	47.1	43.3	0	0.0	-227,567	0.0	-227,567	0.0	-227,567	0.0	-227,567	0.0
21	43.7	40.4	0	0.0	-260,812	0.0	-260,812	0.0	-260,812	0.0	-260,812	0.0
22	40.4	37.3	0	0.0	-299,588	0.0	-299,588	0.0	-299,588	0.0	-299,588	0.0
23	37.3	34.9	-126,535	0.0	-331,250	0.0	-331,250	0.0	-331,250	0.0	-331,250	0.0
24	34.9	32.6	-202,858	0.0	-380,635	0.0	-380,635	0.0	-380,635	0.0	-380,635	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-209,140	0.0	-353,858	0.0	-353,858	0.0	-353,858	0.0	-353,858	0.0
2	39.7	37.1	-245,204	0.0	-375,650	0.0	-375,650	0.0	-375,650	0.0	-375,650	0.0
3	37.8	35.1	-283,861	0.0	-409,475	0.0	-409,475	0.0	-409,475	0.0	-409,475	0.0
4	36.3	33.8	-316,695	0.0	-422,684	0.0	-422,684	0.0	-422,684	0.0	-422,684	0.0
5	35.1	32.6	-351,769	0.0	-457,564	0.0	-457,564	0.0	-457,564	0.0	-457,564	0.0
6	34.4	32.0	-372,840	0.0	-477,495	0.0	-477,495	0.0	-477,495	0.0	-477,495	0.0
7	34.1	31.9	-387,087	0.0	-506,830	0.0	-506,830	0.0	-506,830	0.0	-506,830	0.0
8	34.6	32.4	-384,732	0.0	-518,660	0.0	-518,660	0.0	-518,660	0.0	-518,660	0.0
9	36.0	33.8	-342,967	0.0	-498,322	0.0	-498,322	0.0	-498,322	0.0	-498,322	0.0
10	38.2	34.7	-292,243	0.0	-484,286	0.0	-484,286	0.0	-484,286	0.0	-484,286	0.0
11	40.9	36.2	-223,408	0.0	-462,028	0.0	-462,028	0.0	-462,028	0.0	-462,028	0.0
12	43.9	37.4	-163,988	0.0	-433,498	0.0	-433,498	0.0	-433,498	0.0	-433,498	0.0
13	46.9	39.4	-97,832	0.0	-379,557	0.0	-379,557	0.0	-379,557	0.0	-379,557	0.0
14	49.7	41.4	-44,296	0.0	-342,006	0.0	-342,006	0.0	-342,006	0.0	-342,006	0.0
15	51.8	42.8	0	0.0	-292,316	0.0	-292,316	0.0	-292,316	0.0	-292,316	0.0
16	53.2	43.9	0	0.0	-260,505	0.0	-260,505	0.0	-260,505	0.0	-260,505	0.0
17	53.7	44.2	0	0.0	-229,917	0.0	-229,917	0.0	-229,917	0.0	-229,917	0.0
18	53.4	44.4	0	0.0	-219,494	0.0	-219,494	0.0	-219,494	0.0	-219,494	0.0
19	52.7	44.4	0	0.0	-224,548	0.0	-224,548	0.0	-224,548	0.0	-224,548	0.0
20	51.5	45.2	0	0.0	-240,219	0.0	-240,219	0.0	-240,219	0.0	-240,219	0.0
21	50.0	44.6	0	0.0	-262,086	0.0	-262,086	0.0	-262,086	0.0	-262,086	0.0
22	48.1	43.3	0	0.0	-279,875	0.0	-279,875	0.0	-279,875	0.0	-279,875	0.0
23	46.1	41.8	-46,022	0.0	-299,727	0.0	-299,727	0.0	-299,727	0.0	-299,727	0.0
24	43.9	40.1	-167,521	0.0	-322,480	0.0	-322,480	0.0	-322,480	0.0	-322,480	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

March			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	51.3	46.8	0	0.0		0	0.0		-131,641	0.0		-131,641	0.0		-131,641	0.0	
2	48.7	44.6	0	0.0		0	0.0		-166,063	0.0		-166,063	0.0		-166,063	0.0	
3	46.6	42.9	-57,010	0.0		-26,299	0.0		-196,623	0.0		-196,623	0.0		-196,623	0.0	
4	44.9	41.4	-93,819	0.0		-232,447	0.0		-232,447	0.0		-232,447	0.0		-232,447	0.0	
5	43.9	40.8	-128,062	0.0		-250,089	0.0		-250,089	0.0		-250,089	0.0		-250,089	0.0	
6	43.5	40.8	-148,109	0.0		-283,679	0.0		-283,679	0.0		-283,679	0.0		-283,679	0.0	
7	44.0	41.4	-165,406	0.0		-296,824	0.0		-296,824	0.0		-296,824	0.0		-296,824	0.0	
8	45.4	42.7	-163,618	0.0		-306,534	0.0		-306,534	0.0		-306,534	0.0		-306,534	0.0	
9	47.7	44.3	-123,953	0.0		-305,923	0.0		-305,923	0.0		-305,923	0.0		-305,923	0.0	
10	50.6	45.8	-77,563	0.0		-283,505	0.0		-283,505	0.0		-283,505	0.0		-283,505	0.0	
11	53.9	47.4	-17,162	0.0		-242,813	0.0		-242,813	0.0		-242,813	0.0		-242,813	0.0	
12	57.4	49.0	0	0.0		-208,761	0.0		-208,761	0.0		-208,761	0.0		-208,761	0.0	
13	60.7	50.8	0	0.0		-159,525	0.0		-159,525	0.0		-159,525	0.0		-159,525	0.0	
14	63.6	52.7	0	0.0		-120,231	0.0		-120,231	0.0		-120,231	0.0		-120,231	0.0	
15	65.9	53.7	0	0.0		-79,491	0.0		-79,491	0.0		-79,491	0.0		-79,491	0.0	
16	67.3	54.4	0	9.9		-38,156	0.0		-38,156	0.0		-38,156	0.0		-38,156	0.0	
17	67.8	54.6	0	20.1		-9,374	0.0		-9,374	0.0		-9,374	0.0		-9,374	0.0	
18	67.4	54.8	0	20.4		0	0.0		0	0.0		0	0.0		0	0.0	
19	66.4	55.2	0	17.9		0	0.0		0	0.0		0	0.0		0	0.0	
20	64.7	56.0	0	15.4		0	0.0		0	0.0		0	0.0		0	0.0	
21	62.5	56.0	0	11.1		-13,052	0.0		-13,052	0.0		-13,052	0.0		-13,052	0.0	
22	60.0	54.1	0	7.8		-43,283	0.0		-43,283	0.0		-43,283	0.0		-43,283	0.0	
23	57.1	51.9	0	4.7		-63,139	0.0		-63,139	0.0		-63,139	0.0		-63,139	0.0	
24	54.2	49.4	-614	0.0		-101,403	0.0		-101,403	0.0		-101,403	0.0		-101,403	0.0	

April			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	61.0	56.5	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
2	58.9	54.9	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
3	57.0	53.5	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
4	55.4	52.4	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
5	54.2	51.4	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
6	53.5	50.9	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
7	53.2	51.1	0	0.0		-15,275	0.0		-15,276	0.0		-15,276	0.0		-15,276	0.0	
8	53.9	51.5	0	0.0		-135,315	0.0		-135,315	0.0		-135,315	0.0		-135,315	0.0	
9	55.9	52.1	0	0.0		-131,008	0.0		-131,008	0.0		-131,008	0.0		-131,008	0.0	
10	58.9	53.2	0	0.0		-104,362	0.0		-104,362	0.0		-104,362	0.0		-104,362	0.0	
11	62.6	55.2	0	6.0		-74,899	0.0		-74,899	0.0		-74,899	0.0		-74,899	0.0	
12	66.5	57.3	0	13.0		-22,063	0.0		-22,063	0.0		-22,063	0.0		-22,063	0.0	
13	70.2	59.6	0	17.8		0	0.0		0	0.0		0	0.0		0	0.0	
14	73.2	61.0	0	22.7		0	0.0		0	0.0		0	0.0		0	0.0	
15	75.2	62.2	0	27.0		0	0.0		0	0.0		0	0.0		0	0.0	
16	75.9	62.2	0	31.0		0	0.0		0	0.0		0	0.0		0	0.0	
17	75.6	62.0	0	32.6		0	0.0		0	0.0		0	0.0		0	0.0	
18	74.9	61.7	0	33.0		0	0.0		0	0.0		0	0.0		0	0.0	
19	73.7	62.0	0	31.7		0	7.2		0	7.2		0	7.2		0	7.2	
20	72.1	62.4	0	29.1		0	9.4		0	9.4		0	9.4		0	9.4	
21	70.2	63.3	0	25.8		0	7.5		0	7.5		0	7.5		0	7.5	
22	68.0	62.5	0	22.5		0	6.0		0	6.0		0	6.0		0	6.0	
23	65.7	60.5	0	18.2		0	2.9		0	2.9		0	2.9		0	2.9	
24	63.4	58.5	0	15.1		0	1.3		0	1.3		0	1.3		0	1.3	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

May			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWE	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	25.7	0	11.7	0	11.7	0	11.7	0	11.7
2	65.7	61.5	0	22.4	0	8.4	0	8.5	0	8.5	0	8.5
3	63.6	59.7	0	18.9	0	5.6	0	5.6	0	5.6	0	5.6
4	61.8	58.4	0	15.8	0	2.6	0	2.6	0	2.6	0	2.6
5	60.5	57.1	0	12.9	-1,829	0.0	-1,829	0.0	-1,829	0.0	-1,829	0.0
6	59.7	56.5	0	10.9	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	11.1	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	12.0	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	14.3	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	18.0	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	21.7	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	26.9	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	31.6	0	5.6	0	5.6	0	5.6	0	5.6
14	81.9	65.3	0	36.2	0	13.3	0	13.3	0	13.3	0	13.3
15	84.1	66.9	0	40.0	0	16.9	0	16.9	0	16.9	0	16.9
16	84.9	67.1	0	43.7	0	20.1	0	20.2	0	20.2	0	20.2
17	84.6	67.3	0	45.3	0	21.6	0	21.7	0	21.7	0	21.7
18	83.8	67.1	0	46.6	0	23.5	0	23.5	0	23.5	0	23.5
19	82.4	67.5	0	45.9	0	23.3	0	23.3	0	23.3	0	23.3
20	80.6	68.9	0	43.7	0	22.5	0	22.6	0	22.6	0	22.6
21	78.5	71.0	0	40.2	0	20.6	0	20.6	0	20.6	0	20.6
22	76.1	69.9	0	36.8	0	18.9	0	19.0	0	19.0	0	19.0
23	73.4	68.0	0	32.3	0	16.7	0	16.7	0	16.7	0	16.7
24	70.8	65.5	0	29.1	0	13.9	0	13.9	0	13.9	0	13.9

June			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWE	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	44.6	0	21.7	0	22.9	0	22.9	0	22.9
2	72.6	68.4	0	35.8	0	18.4	0	19.1	0	19.1	0	19.1
3	70.9	67.3	0	32.4	0	16.6	0	17.2	0	17.2	0	17.2
4	69.6	66.5	0	28.7	0	13.7	0	13.8	0	13.8	0	13.8
5	68.7	65.8	0	27.1	0	10.7	0	10.8	0	10.8	0	10.8
6	68.5	65.7	0	23.9	0	8.9	0	9.0	0	9.0	0	9.0
7	69.0	66.3	0	24.8	0	8.5	0	8.6	0	8.6	0	8.6
8	70.6	66.9	0	28.0	0	8.3	0	8.3	0	8.3	0	8.3
9	73.0	67.7	0	30.7	0	9.6	0	9.7	0	9.7	0	9.7
10	76.1	68.1	0	34.3	0	12.1	0	12.2	0	12.2	0	12.2
11	79.5	69.1	0	38.5	0	16.1	0	16.3	0	16.3	0	16.3
12	82.9	70.1	0	42.3	0	20.8	0	20.9	0	20.9	0	20.9
13	86.0	71.0	0	48.5	0	25.4	0	25.5	0	25.5	0	25.5
14	88.4	72.5	0	51.9	0	30.5	0	30.5	0	30.5	0	30.5
15	90.0	74.0	0	55.4	0	34.0	0	34.0	0	34.0	0	34.0
16	90.5	73.7	0	58.9	0	36.3	0	36.3	0	36.3	0	36.3
17	90.3	74.2	0	61.4	0	38.4	0	38.4	0	38.4	0	38.4
18	89.4	73.9	0	61.4	0	39.7	0	39.7	0	39.7	0	39.7
19	88.1	74.5	0	61.4	0	39.0	0	39.0	0	39.0	0	39.0
20	86.4	75.3	0	59.6	0	37.9	0	37.9	0	37.9	0	37.9
21	84.3	76.5	0	54.3	0	35.5	0	35.5	0	35.5	0	35.5
22	81.9	75.7	0	50.9	0	33.5	0	33.5	0	33.5	0	33.5
23	79.5	74.0	0	47.9	0	30.2	0	30.2	0	30.2	0	30.2
24	77.0	72.1	0	44.0	0	27.7	0	27.7	0	27.7	0	27.7

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	41.6	0	17.4	0	18.5	0	18.5	0	18.5
2	72.4	69.4	0	33.4	0	15.6	0	16.8	0	16.8	0	16.8
3	71.3	68.4	0	31.8	0	12.6	0	13.1	0	13.1	0	13.1
4	70.5	67.7	0	28.0	0	11.1	0	11.3	0	11.3	0	11.3
5	70.0	67.4	0	26.0	0	9.2	0	9.4	0	9.4	0	9.4
6	69.9	67.5	0	24.0	0	7.5	0	7.6	0	7.6	0	7.6
7	70.3	68.0	0	24.2	0	6.8	0	6.8	0	6.8	0	6.8
8	71.7	69.0	0	26.5	0	7.6	0	8.0	0	8.0	0	8.0
9	73.7	69.5	0	29.0	0	8.5	0	8.8	0	8.8	0	8.8
10	76.2	70.6	0	33.3	0	13.3	0	13.4	0	13.4	0	13.4
11	78.9	71.8	0	36.8	0	16.1	0	16.1	0	16.1	0	16.1
12	81.4	73.0	0	41.1	0	20.5	0	20.5	0	20.5	0	20.5
13	83.4	74.4	0	45.7	0	25.2	0	25.2	0	25.2	0	25.2
14	84.8	74.8	0	49.3	0	29.4	0	29.4	0	29.4	0	29.4
15	85.2	75.0	0	53.3	0	31.5	0	31.5	0	31.5	0	31.5
16	85.1	75.0	0	56.2	0	34.5	0	34.5	0	34.5	0	34.5
17	84.6	74.7	0	57.9	0	34.7	0	34.7	0	34.7	0	34.7
18	83.8	74.6	0	58.4	0	35.2	0	35.2	0	35.2	0	35.2
19	82.7	74.6	0	57.4	0	36.0	0	36.0	0	36.0	0	36.0
20	81.4	74.4	0	55.0	0	33.9	0	33.9	0	33.9	0	33.9
21	79.9	74.9	0	51.2	0	31.7	0	31.7	0	31.7	0	31.7
22	78.4	74.0	0	47.6	0	29.3	0	29.3	0	29.3	0	29.3
23	76.8	72.7	0	45.2	0	25.5	0	25.5	0	25.5	0	25.5
24	75.2	71.6	0	41.6	0	23.1	0	23.1	0	23.1	0	23.1

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	40.6	0	19.5	0	21.8	0	21.8	0	21.8
2	73.2	70.3	0	31.8	0	16.3	0	17.1	0	17.1	0	17.1
3	71.7	68.9	0	28.9	0	14.7	0	15.5	0	15.5	0	15.5
4	70.4	67.8	0	26.8	0	11.8	0	11.9	0	11.9	0	11.9
5	69.5	66.8	0	24.5	0	10.2	0	10.3	0	10.3	0	10.3
6	68.9	66.4	0	21.4	0	7.4	0	7.5	0	7.5	0	7.5
7	68.7	66.4	0	21.5	0	5.9	0	6.0	0	6.0	0	6.0
8	69.2	66.8	0	22.3	0	5.2	0	5.2	0	5.2	0	5.2
9	70.8	67.7	0	26.1	0	6.9	0	7.0	0	7.0	0	7.0
10	73.2	67.7	0	29.0	0	8.5	0	8.6	0	8.6	0	8.6
11	76.2	68.8	0	34.9	0	12.1	0	12.3	0	12.3	0	12.3
12	79.3	70.3	0	38.6	0	16.5	0	16.7	0	16.7	0	16.7
13	82.3	72.2	0	44.1	0	21.3	0	21.4	0	21.4	0	21.4
14	84.7	73.7	0	49.7	0	26.1	0	26.1	0	26.1	0	26.1
15	86.3	74.6	0	52.8	0	31.4	0	31.4	0	31.4	0	31.4
16	86.8	75.1	0	56.7	0	32.6	0	32.6	0	32.6	0	32.6
17	86.6	75.1	0	58.1	0	35.5	0	35.5	0	35.5	0	35.5
18	86.0	75.3	0	58.0	0	36.8	0	36.8	0	36.8	0	36.8
19	85.1	76.0	0	56.6	0	35.8	0	35.8	0	35.8	0	35.8
20	83.8	76.8	0	53.7	0	34.3	0	34.3	0	34.3	0	34.3
21	82.3	77.2	0	50.8	0	32.6	0	32.6	0	32.6	0	32.6
22	80.6	76.3	0	47.2	0	30.8	0	30.8	0	30.8	0	30.8
23	78.7	75.3	0	43.1	0	28.3	0	28.3	0	28.3	0	28.3
24	76.8	73.7	0	39.7	0	24.1	0	24.1	0	24.1	0	24.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	26.6	0	10.2	0	10.4	0	10.4	0	10.4
2	67.6	65.0	0	21.3	0	7.8	0	8.1	0	8.1	0	8.1
3	65.8	63.4	0	18.2	0	5.0	0	5.2	0	5.2	0	5.2
4	64.3	62.2	0	16.2	0	2.4	0	2.6	0	2.6	0	2.6
5	63.1	61.1	0	13.3	0	0.7	0	0.8	0	0.8	0	0.8
6	62.4	60.3	0	11.6	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	10.1	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	10.5	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	13.8	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	18.3	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	22.0	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	27.5	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	33.1	0	8.2	0	8.2	0	8.2	0	8.2
14	81.2	68.4	0	37.8	0	14.8	0	14.8	0	14.8	0	14.8
15	83.0	70.0	0	43.4	0	17.8	0	17.8	0	17.8	0	17.8
16	83.7	70.5	0	48.7	0	20.6	0	21.0	0	21.0	0	21.0
17	83.4	70.5	0	49.7	0	24.3	0	24.8	0	24.8	0	24.8
18	82.8	70.9	0	47.5	0	24.9	0	24.9	0	24.9	0	24.9
19	81.6	72.7	0	45.8	0	24.0	0	24.0	0	24.0	0	24.0
20	80.1	74.7	0	42.6	0	23.7	0	23.7	0	23.7	0	23.7
21	78.3	74.1	0	39.6	0	22.3	0	22.3	0	22.3	0	22.3
22	76.3	72.4	0	35.8	0	19.9	0	19.9	0	19.9	0	19.9
23	74.1	70.7	0	31.6	0	15.8	0	15.8	0	15.8	0	15.8
24	71.8	68.9	0	27.4	0	13.4	0	13.4	0	13.4	0	13.4

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	-17,966	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	50.1	48.6	0	0.0	0	0.0	-102,969	0.0	-102,969	0.0	-102,969	0.0
3	48.4	46.9	0	0.0	0	0.0	-166,635	0.0	-166,635	0.0	-166,635	0.0
4	47.1	45.8	0	0.0	-135,263	0.0	-187,929	0.0	-187,929	0.0	-187,929	0.0
5	46.3	44.8	0	0.0	-218,942	0.0	-218,942	0.0	-218,942	0.0	-218,942	0.0
6	46.0	44.5	0	0.0	-256,098	0.0	-256,098	0.0	-256,098	0.0	-256,098	0.0
7	46.8	45.3	-99,472	0.0	-269,025	0.0	-269,025	0.0	-269,025	0.0	-269,025	0.0
8	48.9	47.5	-118,531	0.0	-272,115	0.0	-272,115	0.0	-272,115	0.0	-272,115	0.0
9	52.2	49.9	-73,612	0.0	-250,171	0.0	-250,171	0.0	-250,171	0.0	-250,171	0.0
10	56.2	52.5	-13,467	0.0	-207,190	0.0	-207,190	0.0	-207,190	0.0	-207,190	0.0
11	60.4	54.4	0	0.0	-163,120	0.0	-163,120	0.0	-163,120	0.0	-163,120	0.0
12	64.4	56.0	0	0.0	-107,073	0.0	-107,073	0.0	-107,073	0.0	-107,073	0.0
13	67.7	57.3	0	0.0	-57,096	0.0	-57,096	0.0	-57,096	0.0	-57,096	0.0
14	69.8	58.2	0	0.8	-11,075	0.0	-11,075	0.0	-11,075	0.0	-11,075	0.0
15	70.6	58.1	0	22.3	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	26.4	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	27.8	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	24.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	21.4	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	17.7	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	13.9	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	9.4	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	5.8	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	2.6	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEM

November		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0 49.2	0	0.0	0	0.0	-133,099	0.0	-133,099	0.0	-133,099	0.0
2	49.4 47.3	0	0.0	0	0.0	-168,813	0.0	-168,813	0.0	-168,813	0.0
3	47.2 45.3	-51,495	0.0	-62,552	0.0	-202,542	0.0	-202,542	0.0	-202,542	0.0
4	45.3 43.4	-129,726	0.0	-235,687	0.0	-235,687	0.0	-235,687	0.0	-235,687	0.0
5	43.9 42.2	-165,265	0.0	-254,802	0.0	-254,802	0.0	-254,802	0.0	-254,802	0.0
6	43.0 41.4	-192,815	0.0	-285,235	0.0	-285,235	0.0	-285,235	0.0	-285,235	0.0
7	42.7 41.2	-210,402	0.0	-314,033	0.0	-314,033	0.0	-314,033	0.0	-314,033	0.0
8	43.5 42.0	-197,136	0.0	-323,975	0.0	-323,975	0.0	-323,975	0.0	-323,975	0.0
9	45.9 44.0	-140,483	0.0	-310,897	0.0	-310,897	0.0	-310,897	0.0	-310,897	0.0
10	49.4 46.6	-67,927	0.0	-273,689	0.0	-273,689	0.0	-273,689	0.0	-273,689	0.0
11	53.8 48.6	0	0.0	-231,612	0.0	-231,612	0.0	-231,612	0.0	-231,612	0.0
12	58.4 50.6	0	0.0	-176,420	0.0	-176,420	0.0	-176,420	0.0	-176,420	0.0
13	62.8 52.6	0	0.0	-125,837	0.0	-125,837	0.0	-125,837	0.0	-125,837	0.0
14	66.3 54.5	0	0.0	-58,206	0.0	-58,206	0.0	-58,206	0.0	-58,206	0.0
15	68.7 55.7	0	14.9	-17,843	0.0	-17,843	0.0	-17,843	0.0	-17,843	0.0
16	69.5 56.1	0	25.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2 55.8	0	25.4	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3 57.0	0	21.6	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9 59.4	0	17.8	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0 59.4	0	13.5	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8 58.2	0	9.4	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2 56.1	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5 54.0	0	1.3	-69,708	0.0	-69,708	0.0	-69,708	0.0	-69,708	0.0
24	54.7 51.7	0	0.0	-103,056	0.0	-103,056	0.0	-103,056	0.0	-103,056	0.0

December		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9 42.5	-132,348	0.0	-28,723	0.0	-264,025	0.0	-264,025	0.0	-264,025	0.0
2	43.2 41.1	-169,045	0.0	-299,295	0.0	-299,295	0.0	-299,295	0.0	-299,295	0.0
3	41.8 39.8	-208,219	0.0	-325,748	0.0	-325,748	0.0	-325,748	0.0	-325,748	0.0
4	40.7 38.7	-230,108	0.0	-344,844	0.0	-344,844	0.0	-344,844	0.0	-344,844	0.0
5	40.1 38.4	-261,575	0.0	-374,418	0.0	-374,418	0.0	-374,418	0.0	-374,418	0.0
6	39.9 38.4	-278,287	0.0	-392,014	0.0	-392,014	0.0	-392,014	0.0	-392,014	0.0
7	40.5 39.0	-297,065	0.0	-410,185	0.0	-410,185	0.0	-410,185	0.0	-410,185	0.0
8	42.2 40.7	-307,722	0.0	-423,447	0.0	-423,447	0.0	-423,447	0.0	-423,447	0.0
9	44.9 43.4	-257,496	0.0	-400,132	0.0	-400,132	0.0	-400,132	0.0	-400,132	0.0
10	48.2 45.8	-178,220	0.0	-359,902	0.0	-359,902	0.0	-359,902	0.0	-359,902	0.0
11	51.7 48.3	-107,710	0.0	-308,506	0.0	-308,506	0.0	-308,506	0.0	-308,506	0.0
12	55.0 50.7	-22,629	0.0	-253,920	0.0	-253,920	0.0	-253,920	0.0	-253,920	0.0
13	57.7 52.0	0	0.0	-199,490	0.0	-199,490	0.0	-199,490	0.0	-199,490	0.0
14	59.5 52.6	0	0.0	-147,330	0.0	-147,330	0.0	-147,330	0.0	-147,330	0.0
15	60.1 52.7	0	0.0	-118,886	0.0	-118,886	0.0	-118,886	0.0	-118,886	0.0
16	59.9 52.6	0	0.0	-70,567	0.0	-70,567	0.0	-70,567	0.0	-70,567	0.0
17	59.2 52.1	0	10.8	-72,910	0.0	-72,910	0.0	-72,910	0.0	-72,910	0.0
18	58.2 51.8	0	10.4	-82,725	0.0	-82,725	0.0	-82,725	0.0	-82,725	0.0
19	56.8 52.2	0	6.7	-93,487	0.0	-93,487	0.0	-93,487	0.0	-93,487	0.0
20	55.0 51.4	0	2.5	-127,734	0.0	-127,734	0.0	-127,734	0.0	-127,734	0.0
21	53.1 50.1	-16,211	0.0	-151,342	0.0	-151,342	0.0	-151,342	0.0	-151,342	0.0
22	51.0 48.1	0	0.0	-174,976	0.0	-174,976	0.0	-174,976	0.0	-174,976	0.0
23	48.9 46.2	0	0.0	-208,871	0.0	-208,871	0.0	-208,871	0.0	-208,871	0.0
24	46.9 44.1	0	0.0	-239,755	0.0	-239,755	0.0	-239,755	0.0	-239,755	0.0

01 Card - Job Information

Project: ENERGY STUDY OF COOLING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 25721 (10 BUILDINGS)

-----CARD 08-- Climatic Information -----

Weather	Summer	Winter	Summer	Summer	Winter	Building	Summer	Winter
Code	Clearness	Clearness	Design	Design	Design	Orientation	Ground	Ground
	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb		Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating	Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	RA Load
Method	Method	Method	Units	Units	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	ENLISTED BARRACKS

-----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	ALL THREE FLOORS	10191.2		4	0		11	3		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				10			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	169.25	10		8	0			
1	2	6	10		8	90			
1	3	57.25	10		8	0			
1	4	34	10		8	90			
1	5	57.25	10		8	180			
1	6	16	10		8	90			
1	7	169.25	10		8	180			
1	8	16	10		8	270			
1	9	57.25	10		8	180			
1	10	34	10		8	270			
1	11	57.25	10		8	0			
1	12	6	10		8	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret.	Visible Transmittance	Inside Visible Reflectance
1	1	3.75	1	112	.65	.88	3				
1	3	3.75	1	40	.65	.88	3				
1	4	3.75	1	8	.65	.88	3				
1	5	3.75	1	32	.65	.88	3				
1	6	2	2	1	.65	.88	3				
1	7	3.75	1	128	.65	.88	3				
1	8	2	2	1	.65	.88	3				
1	9	3.75	1	32	.65	.88	3				
1	10	3.75	1	8	.65	.88	3				

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	24	PEOPLE	255	325	2.2	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	REFRIG	1.2	KW	FGHEAT						
1	2	DRYER	7	KW	FGHEAT						
1	3	WASHER	.5	KW	FGHEAT						
1	4	MISS	20.3	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----		-----Heating-----		-----Cooling-----		-----Heating-----		--Reheat Minimum--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----		-----Auxiliary-----		--Room Exhaust--	
	Value	Units	Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF		

-----CARD 33-- External Shading -----

Shading Type	-----OVERHANG-----		-----VERTICAL FINS-----						Adjacent Building Flag
	Glass Height	Projection Out	Glass Width	Projection Left	Projection Out	Projection Right	Projection Out		
3	4	3							

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	FAN COILS SYSTEM

-----CARD 40--- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----

System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	FC						

-----CARD 41-- Zone Assignment -----

[illegible]

```
-----CARD 42--- Fan SP and Duct Parameters-----
```

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHO FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

FC (Utility file not found)

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 75
24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Schedule Name: HT6CONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

01 Card - Job Information

 Project: ENERGY STUDY OF HEATING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 21707 (17 BUILDINGS)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	ENLISTED BARRACKS

-----CARD 20-- General Room Parameters-----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	ALL THREE FLOORS	14000		4	0		11	3		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				10			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	169.25	10		8	0			
1	2	6	10		8	90			
1	3	57.25	10		8	0			
1	4	34	10		8	90			
1	5	57.25	10		8	180			
1	6	16	10		8	90			
1	7	169.25	10		8	180			
1	8	16	10		8	270			
1	9	57.25	10		8	180			
1	10	34	10		8	270			
1	11	57.25	10		8	0			
1	12	6	10		8	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	3.75	1	112	1.03	.82	3				
1	3	3.75	1	40	1.03	.82	3				
1	4	3.75	1	8	1.03	.82	3				
1	5	3.75	1	32	1.03	.82	3				
1	6	2	2	1	1.03	.82	3				
1	7	3.75	1	128	1.03	.82	3				
1	8	2	2	1	1.03	.82	3				
1	9	3.75	1	32	1.03	.82	3				
1	10	3.75	1	8	1.03	.82	3				

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	TYPE4A	TYPE4B								

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	38	PEOPLE	255	325	2.2	WATT-SF	ASHRAE2				

-----CARD 28-- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Misc Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens. to Ret. Air	Radiant Fraction	Optional Air Path
1	1	REFRIG	11.4	KW	TYPE4B						
1	2	DRYER	7	KW	TYPE4B						
1	3	WASHER	.5	KW	TYPE4B						
1	4	MISS	13.5	KW	TYPE4B						

-----CARD 29-- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
1	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
1	Value	Units	Value	Units	Value	Units	Value	Units		
1	1	CFM-SF	1	CFM-SF						

-----CARD 33-- External Shading -----

Shading Type	Glass Height	-----OVERHANG-----		-----VERTICAL FINS-----					
		Above Glass	Projection Out	Glass Width	Projection Left	Projection Out	Projection Right	Projection Out	Adjacent Building Flag
3	4		3						

-----CARD 39-- System Alternative -----

Number	Description
1	FAN COILS SYSTEM

-----CARD 40--- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----

System		Ventil					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBvh	SADBvh	Schedule	Schedule	Pressure
1	FC						

```
-----CARD 41-- Zone Assignment -----
```

[illegible]

-----CARD 42--- Fan SP and Duct Parameters-----

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

TYPE4A PEOPLE LOAD

TYPE4B LIGHTING LOAD

System:

FC (Utility file not found)

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
------	-------------

0	75
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: TYPE4A
Project: FT GORDON ENERGY STUDY
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments: PEOPLE, VENTILLATION, INFILTRA

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

Hour	Util Percent
0	100
8	10
17	100
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

Hour	Util Percent
0	100
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

Hour	Util Percent
0	0
24	

Schedule Name: TYPE4B
Project: FORT GORDON ENERGY STUDY
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments: LIGHTING SCHEDULE

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: WKDY

Hour	Util Percent
0	0
5	50
8	0
17	50
21	0
24	

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour	Util Percent
0	50
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

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*****  
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**          T R A C E    6 0 0    A N A L Y S I S          **  
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**          by          **  
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 21709 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 12:35: 0 8/15/94
Dataset Name: FGTYPS5A .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==) Mo/Hr: 6/17 * Mo/Hr: 6/17 * Mo/Hr: 13/ 1
Outside Air ==) OADB/WB/HR: 98/ 74/ 91.0 * OADB: 98 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	22,967	0	0	22,967	11.76	*	22,967	13.15	*	-12,031	-12,031	8.65
Glass Solar	97,200	0	0	97,200	49.78	*	97,200	55.67	*	0	0	0.00
Glass Cond	30,730	0	0	30,730	15.74	*	30,730	17.60	*	-68,413	-68,413	49.18
Wall Cond	17,575	0	0	17,575	9.00	*	17,575	10.07	*	-25,108	-25,108	18.05
Partition	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	10,392	0	0	10,392	5.32	*	6,121	3.51	*	-14,841	-14,841	10.67
Sub Total==>	178,864	0	0	178,864	91.61	*	174,593	100.00	*	-120,393	-120,393	86.54
Internal Loads												
Lights	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
People	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	16,386	8.39	*	0	0.00	*	0	-18,722	13.46
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0	0	0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0	0	0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	178,864	0	0	195,250	100.00	*	174,593	100.00	*	-120,393	-139,114	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	
Main Clg	16.3	195.3	184.2	11,056	75.8	63.0	66.1	60.8	57.2	64.7	Part	1,776
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	7,284
Totals	16.3	195.3									Wall	2,973

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)--		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA		Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent			Clg Cfm/Sqft		SADB	60.8	77.8
Main Htg	-139.1	11,056	66.5	77.8	Infil	238	297	Clg Cfm/Ton	679.49	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	11,056	11,056	Clg Sqft/Ton	447.67	Return	75.0	68.0
Preheat	-0.0	11,056	66.5	60.8	Mincfm	0	0	Clg Btuh/Sqft	26.81	Ret/OA	75.8	66.5
Reheat	0.0	0	0.0	0.0	Return	11,056	11,056	No. People	25	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	375	375	Htg % OA	3.4	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.52	Fn BldTD	0.0	0.0
Total	-139.1				Auxil	0	0	Htg Btuh/Sqft	-19.10	Fn Frict	0.0	0.0

System 2 Block UH - UNIT HEATERS

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==) Mo/Hr: 0/ 0 * Mo/Hr: 0/ 0 * Mo/Hr: 13/ 1
Outside Air ==) OADB/WE/HR: 0/ 0/ 0.0 * OADB: 0 * OADB: 2?

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)	(Btuh)	(Btuh)	(%)
Envelope Loads											
Skylite Solr	0	0		0	0.00	*	0	0.00	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	0	0	0.00
Roof Cond	0	0		0	0.00	*	0	0.00	-6,346	-6,346	12.61
Glass Solar	0	0		0	0.00	*	0	0.00	0	0	0.00
Glass Cond	0	0		0	0.00	*	0	0.00	-11,402	-11,402	22.65
Wall Cond	0	0		0	0.00	*	0	0.00	-23,792	-23,792	47.26
Partition	0			0	0.00	*	0	0.00	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	0	0	0.00
Infiltration	0			0	0.00	*	0	0.00	-8,800	-8,800	17.48
Sub Total==)	0	0		0	0.00	*	0	0.00	-50,341	-50,341	100.00
Internal Loads						*					
Lights	0	0		0	0.00	*	0	0.00	0	0	0.00
People	0			0	0.00	*	0	0.00	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	0	0	0.00
Outside Air	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Sup. Fan Heat				0	0.00	*		0.00		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00		0	0.00
Grand Total==)	0	0	0	0	0.00	*	0	0.00	-50,341	-50,341	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	Part	ExFlr
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	3,842	0	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0		
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	3,842	0	0
Totals	0.0	0.0								1,763	225	13

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA		Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	0	0	Clg Cfm/Sqft	0.00	SADB	0.0	79.8
Main Htg	-50.3	3,842	68.0	79.8	Infil	0	176	Clg Cfm/Ton	0.00	Plenum	0.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	0	3,842	Clg Sqft/Ton	0.00	Return	0.0	68.0
Preheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Sqft	0.00	Ret/OA	0.0	68.0
Reheat	0.0	0	0.0	0.0	Return	0	3,842	No. People	0	Runarnd	0.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	0	0	Htg % OA	0.0	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-50.3				Auxil	0	0	Htg Btuh/SqFt	-13.10	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
 MULTI-ZONE SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-114,067	0.0	-85,278	0.0	-97,683	0.0	-97,685	0.0	-97,685	0.0
2	32.9	30.7	-104,795	0.0	-92,606	0.0	-101,217	0.0	-101,219	0.0	-101,219	0.0
3	33.1	31.3	-99,406	0.0	-97,151	0.0	-103,131	0.0	-103,132	0.0	-103,132	0.0
4	33.9	32.1	-96,342	0.0	-97,806	0.0	-101,959	0.0	-101,959	0.0	-101,959	0.0
5	35.2	33.5	-94,721	0.0	-98,474	0.0	-101,358	0.0	-101,358	0.0	-101,358	0.0
6	37.0	35.4	-87,262	0.0	-96,547	0.0	-98,550	0.0	-98,550	0.0	-98,550	0.0
7	39.0	37.6	-84,384	0.0	-94,443	0.0	-95,834	0.0	-95,834	0.0	-95,834	0.0
8	41.3	40.1	-79,918	0.0	-90,495	0.0	-91,461	0.0	-91,461	0.0	-91,461	0.0
9	43.7	42.5	-68,167	0.0	-82,488	0.0	-83,159	0.0	-83,159	0.0	-83,159	0.0
10	46.1	44.0	-49,518	0.0	-73,577	0.0	-74,043	0.0	-74,043	0.0	-74,043	0.0
11	48.4	45.0	-27,316	0.0	-61,132	0.0	-61,455	0.0	-61,455	0.0	-61,455	0.0
12	50.5	45.6	-13,193	0.0	-50,219	0.0	-50,443	0.0	-50,443	0.0	-50,443	0.0
13	52.2	46.1	-9,608	0.0	-40,905	0.0	-41,060	0.0	-41,060	0.0	-41,060	0.0
14	53.5	46.4	-5,959	0.0	-32,060	0.0	-32,168	0.0	-32,168	0.0	-32,168	0.0
15	54.3	46.3	-3,233	0.0	-25,234	0.0	-25,308	0.0	-25,308	0.0	-25,308	0.0
16	54.6	46.1	-1,270	3.9	-19,666	0.0	-19,718	0.0	-19,718	0.0	-19,718	0.0
17	54.0	45.9	-812	5.4	-17,646	0.0	-17,682	0.0	-17,682	0.0	-17,682	0.0
18	52.5	45.0	-3,384	3.1	-20,729	0.0	-20,754	0.0	-20,754	0.0	-20,754	0.0
19	50.1	44.8	-6,600	1.2	-29,664	0.0	-29,681	0.0	-29,681	0.0	-29,681	0.0
20	47.1	43.3	-10,166	0.0	-42,464	0.0	-42,476	0.0	-42,476	0.0	-42,476	0.0
21	43.7	40.4	-12,253	0.0	-55,403	0.0	-55,412	0.0	-55,412	0.0	-55,412	0.0
22	40.4	37.3	-14,639	0.0	-69,039	0.0	-69,045	0.0	-69,045	0.0	-69,045	0.0
23	37.3	34.9	-17,449	0.0	-80,443	0.0	-80,447	0.0	-80,447	0.0	-80,447	0.0
24	34.9	32.6	-31,194	0.0	-90,134	0.0	-90,137	0.0	-90,137	0.0	-90,137	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-51,204	0.0	-50,510	0.4	-71,139	0.0	-71,146	0.0	-71,146	0.0
2	39.7	37.1	-57,542	0.0	-66,630	0.0	-79,788	0.0	-79,792	0.0	-79,792	0.0
3	37.8	35.1	-63,682	0.0	-78,771	0.0	-87,905	0.0	-87,908	0.0	-87,908	0.0
4	36.3	33.8	-68,946	0.0	-87,898	0.0	-94,238	0.0	-94,241	0.0	-94,241	0.0
5	35.1	32.6	-72,832	0.0	-96,638	0.0	-101,041	0.0	-101,042	0.0	-101,042	0.0
6	34.4	32.0	-75,077	0.0	-101,016	0.0	-104,071	0.0	-104,072	0.0	-104,072	0.0
7	34.1	31.9	-75,059	0.0	-104,840	0.0	-106,962	0.0	-106,963	0.0	-106,963	0.0
8	34.6	32.4	-70,692	0.0	-105,251	0.0	-106,724	0.0	-106,725	0.0	-106,725	0.0
9	36.0	33.8	-58,199	0.0	-99,421	0.0	-100,443	0.0	-100,444	0.0	-100,444	0.0
10	38.2	34.7	-38,593	0.0	-88,667	0.0	-89,377	0.0	-89,377	0.0	-89,377	0.0
11	40.9	36.2	-15,916	0.0	-75,056	0.0	-75,548	0.0	-75,548	0.0	-75,548	0.0
12	43.9	37.4	-10,209	0.0	-61,288	0.0	-61,629	0.0	-61,629	0.0	-61,629	0.0
13	46.9	39.4	-6,773	0.0	-47,814	0.0	-48,051	0.0	-48,051	0.0	-48,051	0.0
14	49.7	41.4	-3,089	0.0	-35,029	0.0	-35,192	0.0	-35,192	0.0	-35,192	0.0
15	51.8	42.8	0	2.5	-24,903	0.0	-25,016	0.0	-25,016	0.0	-25,016	0.0
16	53.2	43.9	0	6.0	-16,903	0.0	-16,981	0.0	-16,981	0.0	-16,981	0.0
17	53.7	44.2	0	6.4	-14,498	0.0	-14,498	0.0	-14,498	0.0	-14,498	0.0
18	53.4	44.4	0	5.4	-14,118	0.0	-14,118	0.0	-14,118	0.0	-14,118	0.0
19	52.7	44.4	0	2.6	-15,348	0.0	-15,348	0.0	-15,348	0.0	-15,348	0.0
20	51.5	45.2	-3,710	0.8	-21,720	0.0	-21,762	0.0	-21,762	0.0	-21,762	0.0
21	50.0	44.6	-9,834	0.0	-31,143	0.0	-31,172	0.0	-31,172	0.0	-31,172	0.0
22	48.1	43.3	-12,528	0.0	-41,401	0.0	-41,421	0.0	-41,421	0.0	-41,421	0.0
23	46.1	41.8	-14,856	0.0	-51,722	0.0	-51,736	0.0	-51,736	0.0	-51,736	0.0
24	43.9	40.1	-19,736	0.0	-61,160	0.0	-61,170	0.0	-61,170	0.0	-61,170	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

March		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3 46.8	-8,499	0.0	0	0.0	-10,909	0.0	-10,909	0.0	-10,909	0.0
2	48.7 44.6	-14,307	0.0	0	0.0	-17,876	0.0	-17,876	0.0	-17,876	0.0
3	46.6 42.9	-20,631	0.0	-11,499	0.0	-32,942	0.0	-32,942	0.0	-32,942	0.0
4	44.9 41.4	-26,405	0.0	-24,679	0.0	-45,904	0.0	-45,904	0.0	-45,904	0.0
5	43.9 40.8	-30,307	0.0	-33,606	0.0	-54,299	0.0	-54,299	0.0	-54,299	0.0
6	43.5 40.8	-32,031	0.0	-43,095	0.0	-59,907	0.0	-59,907	0.0	-59,907	0.0
7	44.0 41.4	-31,931	0.0	-60,323	0.0	-62,115	0.0	-62,115	0.0	-62,115	0.0
8	45.4 42.7	-23,367	0.0	-57,257	0.0	-58,501	0.0	-58,501	0.0	-58,501	0.0
9	47.7 44.3	-7,623	0.0	-47,666	0.0	-48,531	0.0	-48,531	0.0	-48,531	0.0
10	50.6 45.8	-3,236	0.0	-34,118	0.0	-34,718	0.0	-34,718	0.0	-34,718	0.0
11	53.9 47.4	0	0.0	-16,967	0.0	-17,383	0.0	-17,383	0.0	-17,383	0.0
12	57.4 49.0	0	0.0	-8,366	0.0	-8,366	0.0	-8,366	0.0	-8,366	0.0
13	60.7 50.8	0	6.2	-6,319	0.0	-6,319	0.0	-6,319	0.0	-6,319	0.0
14	63.6 52.7	0	7.1	-3,102	0.0	-3,102	0.0	-3,102	0.0	-3,102	0.0
15	65.9 53.7	0	8.4	-1,395	0.0	-1,395	0.0	-1,395	0.0	-1,395	0.0
16	67.3 54.4	0	9.7	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8 54.6	0	10.1	0	3.6	0	3.6	0	3.6	0	3.6
18	67.4 54.8	0	9.5	0	3.5	0	3.5	0	3.5	0	3.5
19	66.4 55.2	0	6.4	0	2.1	0	2.1	0	2.1	0	2.1
20	64.7 56.0	0	4.3	0	0.8	0	0.8	0	0.8	0	0.8
21	62.5 56.0	0	2.7	-796	0.0	-796	0.0	-796	0.0	-796	0.0
22	60.0 54.1	0	1.4	-5,035	0.0	-5,035	0.0	-5,035	0.0	-5,035	0.0
23	57.1 51.9	0	0.0	-6,783	0.0	-6,783	0.0	-6,783	0.0	-6,783	0.0
24	54.2 49.4	0	0.0	-8,626	0.0	-8,626	0.0	-8,626	0.0	-8,626	0.0

April		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0 56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9 54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0 53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4 52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2 51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5 50.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2 51.1	0	0.0	-2,073	0.0	-2,475	0.0	-2,475	0.0	-2,475	0.0
8	53.9 51.5	0	0.0	-3,950	0.0	-4,184	0.0	-4,184	0.0	-4,184	0.0
9	55.9 52.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	58.9 53.2	0	5.7	0	0.0	0	0.0	0	0.0	0	0.0
11	62.6 55.2	0	7.1	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5 57.3	0	7.9	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2 59.6	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2 61.0	0	9.4	0	3.1	0	3.0	0	3.0	0	3.0
15	75.2 62.2	0	10.6	0	5.6	0	5.6	0	5.6	0	5.6
16	75.9 62.2	0	11.5	0	5.8	0	5.8	0	5.8	0	5.8
17	75.6 62.0	0	12.0	0	6.3	0	6.3	0	6.3	0	6.3
18	74.9 61.7	0	11.6	0	6.1	0	6.1	0	6.1	0	6.1
19	73.7 62.0	0	9.2	0	5.0	0	5.0	0	5.0	0	5.0
20	72.1 62.4	0	6.8	0	3.4	0	3.4	0	3.4	0	3.4
21	70.2 63.3	0	5.0	0	2.5	0	2.5	0	2.5	0	2.5
22	68.0 62.5	0	3.7	0	1.5	0	1.5	0	1.5	0	1.5
23	65.7 60.5	0	2.5	0	0.6	0	0.6	0	0.6	0	0.6
24	63.4 58.5	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

May	----- Design -----					----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		2.4		0		0.9		0		1.1		0		1.1		0		1.1
2	65.7	61.5		0		1.9		0		0.0		0		0.0		0		0.0		0		0.0
3	63.6	59.7		0		1.2		0		0.0		0		0.0		0		0.0		0		0.0
4	61.8	58.4		0		0.9		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1		0		0.4		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5		0		0.2		0		0.0		0		0.0		0		0.0		0		0.0
7	59.4	56.5		0		1.8		0		0.0		0		0.0		0		0.0		0		0.0
8	60.1	56.3		0		3.9		0		0.0		0		0.0		0		0.0		0		0.0
9	62.4	56.3		0		6.0		0		0.0		0		0.0		0		0.0		0		0.0
10	65.7	57.2		0		7.9		0		0.0		0		0.0		0		0.0		0		0.0
11	69.9	58.9		0		9.2		0		2.6		0		2.7		0		2.7		0		2.7
12	74.3	60.9		0		9.9		0		4.6		0		4.7		0		4.7		0		4.7
13	78.5	63.7		0		10.2		0		5.3		0		5.4		0		5.4		0		5.4
14	81.9	65.3		0		11.3		0		6.4		0		6.5		0		6.5		0		6.5
15	84.1	66.9		0		12.6		0		7.7		0		7.7		0		7.7		0		7.7
16	84.9	67.1		0		13.4		0		8.2		0		8.3		0		8.3		0		8.3
17	84.6	67.3		0		13.9		0		8.7		0		8.7		0		8.7		0		8.7
18	83.8	67.1		0		13.6		0		8.6		0		8.6		0		8.6		0		8.6
19	82.4	67.5		0		11.8		0		7.7		0		7.7		0		7.7		0		7.7
20	80.6	68.9		0		9.2		0		5.9		0		5.9		0		5.9		0		5.9
21	78.5	71.0		0		7.3		0		5.0		0		5.0		0		5.0		0		5.0
22	76.1	69.9		0		5.9		0		3.9		0		3.9		0		3.9		0		3.9
23	73.4	68.0		0		4.5		0		2.9		0		2.9		0		2.9		0		2.9
24	70.8	65.5		0		3.4		0		1.9		0		1.9		0		1.9		0		1.9

June	----- Design -----					----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		5.6		0		2.8		0		3.1		0		3.1
2	72.6	68.4		0		4.6		0		2.1		0		2.3		0		2.3
3	70.9	67.3		0		3.9		0		1.1		0		1.2		0		1.2
4	69.6	66.5		0		3.2		0		0.8		0		0.9		0		0.9
5	68.7	65.8		0		3.0		0		0.2		0		0.2		0		0.2
6	68.5	65.7		0		2.6		0		0.0		0		0.0		0		0.0
7	69.0	66.3		0		4.5		0		0.6		0		0.7		0		0.7
8	70.6	66.9		0		7.0		0		2.7		0		2.7		0		2.7
9	73.0	67.7		0		9.1		0		4.3		0		4.3		0		4.3
10	76.1	68.1		0		10.6		0		6.1		0		6.1		0		6.1
11	79.5	69.1		0		11.9		0		7.0		0		7.0		0		7.0
12	82.9	70.1		0		12.3		0		7.7		0		7.7		0		7.7
13	86.0	71.0		0		12.8		0		8.2		0		8.2		0		8.2
14	88.4	72.5		0		13.5		0		9.3		0		9.3		0		9.3
15	90.0	74.0		0		14.7		0		10.9		0		10.9		0		10.9
16	90.5	73.7		0		15.5		0		10.8		0		10.8		0		10.8
17	90.3	74.2		0		16.1		0		11.3		0		11.3		0		11.3
18	89.4	73.9		0		15.9		0		11.2		0		11.2		0		11.2
19	88.1	74.5		0		14.3		0		10.3		0		10.3		0		10.3
20	86.4	75.3		0		11.8		0		8.3		0		8.3		0		8.3
21	84.3	76.5		0		10.0		0		7.2		0		7.2		0		7.2
22	81.9	75.7		0		8.2		0		6.1		0		6.1		0		6.1
23	79.5	74.0		0		7.0		0		5.0		0		5.0		0		5.0
24	77.0	72.1		0		6.0		0		4.1		0		4.1		0		4.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

July	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5		0		5.7		0		2.0		0		2.3		0		2.3		0		2.3
2	72.4	69.4		0		4.6		0		1.7		0		1.9		0		1.9		0		1.9
3	71.3	68.4		0		4.1		0		1.1		0		1.1		0		1.1		0		1.1
4	70.5	67.7		0		3.5		0		0.5		0		0.5		0		0.5		0		0.5
5	70.0	67.4		0		3.3		0		0.2		0		0.2		0		0.2		0		0.2
6	69.9	67.5		0		2.8		0		0.0		0		0.0		0		0.0		0		0.0
7	70.3	68.0		0		4.4		0		0.4		0		0.4		0		0.4		0		0.4
8	71.7	69.0		0		7.0		0		2.8		0		2.8		0		2.8		0		2.8
9	73.7	69.5		0		8.8		0		4.6		0		4.7		0		4.7		0		4.7
10	76.2	70.6		0		10.4		0		6.5		0		6.5		0		6.5		0		6.5
11	78.9	71.8		0		11.7		0		7.4		0		7.4		0		7.4		0		7.4
12	81.4	73.0		0		12.2		0		7.9		0		7.9		0		7.9		0		7.9
13	83.4	74.4		0		12.4		0		8.2		0		8.2		0		8.2		0		8.2
14	84.8	74.8		0		13.1		0		9.0		0		9.0		0		9.0		0		9.0
15	85.2	75.0		0		14.3		0		10.1		0		10.1		0		10.1		0		10.1
16	85.1	75.0		0		15.1		0		10.0		0		10.0		0		10.0		0		10.0
17	84.6	74.7		0		15.7		0		10.2		0		10.2		0		10.2		0		10.2
18	83.8	74.6		0		15.5		0		10.2		0		10.2		0		10.2		0		10.2
19	82.7	74.6		0		14.2		0		8.9		0		8.9		0		8.9		0		8.9
20	81.4	74.4		0		11.4		0		7.3		0		7.3		0		7.3		0		7.3
21	79.9	74.9		0		9.5		0		6.0		0		6.0		0		6.0		0		6.0
22	78.4	74.0		0		8.1		0		5.1		0		5.1		0		5.1		0		5.1
23	76.8	72.7		0		7.1		0		4.0		0		4.0		0		4.0		0		4.0
24	75.2	71.6		0		6.2		0		3.1		0		3.1		0		3.1		0		3.1

August	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0		5.6		0		2.5		0		2.8		0		2.8		0		2.8
2	73.2	70.3		0		4.4		0		1.9		0		2.0		0		2.0		0		2.0
3	71.7	68.9		0		4.0		0		1.5		0		1.6		0		1.6		0		1.6
4	70.4	67.8		0		3.3		0		0.9		0		0.9		0		0.9		0		0.9
5	69.5	66.8		0		2.7		0		0.2		0		0.2		0		0.2		0		0.2
6	68.9	66.4		0		2.6		0		0.0		0		0.0		0		0.0		0		0.0
7	68.7	66.4		0		3.4		0		0.0		0		0.0		0		0.0		0		0.0
8	69.2	66.8		0		6.0		0		1.8		0		1.8		0		1.8		0		1.8
9	70.8	67.7		0		8.4		0		3.6		0		3.7		0		3.7		0		3.7
10	73.2	67.7		0		10.1		0		5.6		0		5.6		0		5.6		0		5.6
11	76.2	68.8		0		11.6		0		6.6		0		6.6		0		6.6		0		6.6
12	79.3	70.3		0		12.1		0		7.1		0		7.1		0		7.1		0		7.1
13	82.3	72.2		0		12.7		0		7.9		0		7.9		0		7.9		0		7.9
14	84.7	73.7		0		13.6		0		8.8		0		8.8		0		8.8		0		8.8
15	86.3	74.6		0		14.6		0		10.1		0		10.1		0		10.1		0		10.1
16	86.8	75.1		0		15.7		0		10.7		0		10.7		0		10.7		0		10.7
17	86.6	75.1		0		16.0		0		10.8		0		10.8		0		10.8		0		10.8
18	86.0	75.3		0		15.6		0		10.9		0		10.9		0		10.9		0		10.9
19	85.1	76.0		0		13.4		0		9.6		0		9.6		0		9.6		0		9.6
20	83.8	76.8		0		11.2		0		7.7		0		7.7		0		7.7		0		7.7
21	82.3	77.2		0		9.5		0		6.8		0		6.8		0		6.8		0		6.8
22	80.6	76.3		0		8.1		0		5.7		0		5.7		0		5.7		0		5.7
23	78.7	75.3		0		6.9		0		4.7		0		4.7		0		4.7		0		4.7
24	76.8	73.7		0		5.9		0		3.7		0		3.7		0		3.7		0		3.7

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
 MULTI-ZONE SYSTEMS

September			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	69.6	67.4		0	3.7		0	0.9			0	1.1			0	1.1			0	1.1		
2	67.6	65.0		0	2.7		0	0.2			0	0.2			0	0.2			0	0.2		
3	65.8	63.4		0	1.9		0	0.0			0	0.0			0	0.0			0	0.0		
4	64.3	62.2		0	1.3		0	0.0			0	0.0			0	0.0			0	0.0		
5	63.1	61.1		0	1.1		0	0.0			0	0.0			0	0.0			0	0.0		
6	62.4	60.3		0	0.6		0	0.0			0	0.0			0	0.0			0	0.0		
7	62.2	60.2		0	0.6		0	0.0			0	0.0			0	0.0			0	0.0		
8	62.9	60.9		0	3.4		0	0.0			0	0.0			0	0.0			0	0.0		
9	64.7	61.8		0	5.8		0	0.0			0	0.0			0	0.0			0	0.0		
10	67.6	62.1		0	8.2		0	0.0			0	0.0			0	0.0			0	0.0		
11	71.1	63.1		0	9.4		0	3.0			0	3.2			0	3.2			0	3.2		
12	74.8	64.6		0	10.1		0	5.7			0	6.0			0	6.0			0	6.0		
13	78.3	66.7		0	10.8		0	6.3			0	6.4			0	6.4			0	6.4		
14	81.2	68.4		0	11.9		0	7.5			0	7.5			0	7.5			0	7.5		
15	83.0	70.0		0	13.3		0	8.4			0	8.4			0	8.4			0	8.4		
16	83.7	70.5		0	14.4		0	9.2			0	9.2			0	9.2			0	9.2		
17	83.4	70.5		0	14.5		0	9.2			0	9.2			0	9.2			0	9.2		
18	82.8	70.9		0	13.3		0	8.5			0	8.5			0	8.5			0	8.5		
19	81.6	72.7		0	10.6		0	6.9			0	6.9			0	6.9			0	6.9		
20	80.1	74.7		0	8.8		0	5.9			0	5.9			0	5.9			0	5.9		
21	78.3	74.1		0	7.3		0	4.8			0	4.8			0	4.8			0	4.8		
22	76.3	72.4		0	6.0		0	3.8			0	3.8			0	3.8			0	3.8		
23	74.1	70.7		0	4.9		0	2.8			0	2.8			0	2.8			0	2.8		
24	71.8	68.9		0	3.9		0	1.9			0	1.9			0	1.9			0	1.9		

October			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	52.2	50.5		0	0.0		0	0.0			-8,926	0.0			-8,926	0.0			-8,926	0.0		
2	50.1	48.6		0	0.0		0	0.0			-10,377	0.0			-10,377	0.0			-10,377	0.0		
3	48.4	46.9		0	0.0		-3,198	0.0			-23,992	0.0			-23,992	0.0			-23,992	0.0		
4	47.1	45.8		0	0.0		-16,131	0.0			-35,739	0.0			-35,739	0.0			-35,739	0.0		
5	46.3	44.8		0	0.0		-24,922	0.0			-43,987	0.0			-43,987	0.0			-43,987	0.0		
6	46.0	44.5		0	0.0		-30,622	0.0			-49,770	0.0			-49,770	0.0			-49,770	0.0		
7	46.8	45.3		0	0.0		-32,228	0.0			-51,219	0.0			-51,219	0.0			-51,219	0.0		
8	48.9	47.5		0	0.0		-28,142	0.0			-46,268	0.0			-46,268	0.0			-46,268	0.0		
9	52.2	49.9		0	0.0		-25,872	0.0			-33,950	0.0			-33,950	0.0			-33,950	0.0		
10	56.2	52.5		0	0.0		-16,338	0.0			-16,997	0.0			-16,997	0.0			-16,997	0.0		
11	60.4	54.4		0	0.0		-8,773	0.0			-8,773	0.0			-8,773	0.0			-8,773	0.0		
12	64.4	56.0		0	2.8		-6,085	0.0			-6,085	0.0			-6,085	0.0			-6,085	0.0		
13	67.7	57.3		0	6.6		-3,057	0.0			-3,057	0.0			-3,057	0.0			-3,057	0.0		
14	69.8	58.2		0	7.8		0	0.0			0	0.0			0	0.0			0	0.0		
15	70.6	58.1		0	9.1		0	0.0			0	0.0			0	0.0			0	0.0		
16	70.3	57.5		0	10.1		0	3.9			0	3.8			0	3.8			0	3.8		
17	69.5	57.3		0	10.0		0	4.5			0	4.5			0	4.5			0	4.5		
18	68.2	57.7		0	7.5		0	3.1			0	3.1			0	3.1			0	3.1		
19	66.5	60.6		0	5.4		0	1.7			0	1.7			0	1.7			0	1.7		
20	64.4	60.8		0	3.7		0	0.9			0	0.9			0	0.9			0	0.9		
21	62.1	59.4		0	2.2		0	0.0			0	0.0			0	0.0			0	0.0		
22	59.6	57.3		0	1.1		0	0.0			0	0.0			0	0.0			0	0.0		
23	57.0	55.1		0	0.2		-3,330	0.0			-3,330	0.0			-3,330	0.0			-3,330	0.0		
24	54.5	52.7		0	0.0		-7,444	0.0			-7,444	0.0			-7,444	0.0			-7,444	0.0		

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
 MULTI-ZONE SYSTEMS

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OAOB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-8,013	0.0	0	0.0	-10,719	0.0	-10,719	0.0	-10,719	0.0
2	49.4	47.3	-9,509	0.0	0	0.0	-18,423	0.0	-18,423	0.0	-18,423	0.0
3	47.2	45.3	-10,929	0.0	-12,690	0.0	-33,468	0.0	-33,468	0.0	-33,468	0.0
4	45.3	43.4	-16,498	0.0	-39,485	0.0	-46,415	0.0	-46,415	0.0	-46,415	0.0
5	43.9	42.2	-25,677	0.0	-52,029	0.0	-55,559	0.0	-55,559	0.0	-55,559	0.0
6	43.0	41.4	-30,491	0.0	-59,521	0.0	-61,975	0.0	-61,975	0.0	-61,975	0.0
7	42.7	41.2	-31,236	0.0	-64,080	0.0	-65,785	0.0	-65,785	0.0	-65,785	0.0
8	43.5	42.0	-27,329	0.0	-64,516	0.0	-65,701	0.0	-65,701	0.0	-65,701	0.0
9	45.9	44.0	-12,962	0.0	-56,817	0.0	-57,640	0.0	-57,640	0.0	-57,640	0.0
10	49.4	46.6	-7,183	0.0	-42,266	0.0	-42,838	0.0	-42,838	0.0	-42,838	0.0
11	53.8	48.6	-3,293	0.0	-24,646	0.0	-25,043	0.0	-25,043	0.0	-25,043	0.0
12	58.4	50.6	0	0.0	-12,370	0.0	-12,370	0.0	-12,370	0.0	-12,370	0.0
13	62.8	52.6	0	0.1	-9,431	0.0	-9,431	0.0	-9,431	0.0	-9,431	0.0
14	66.3	54.5	0	6.7	-6,970	0.0	-6,970	0.0	-6,970	0.0	-6,970	0.0
15	68.7	55.7	0	8.0	-4,071	0.0	-4,071	0.0	-4,071	0.0	-4,071	0.0
16	69.5	56.1	0	8.9	-2,480	0.0	-2,480	0.0	-2,480	0.0	-2,480	0.0
17	69.2	55.8	0	8.3	-1,339	0.0	-1,339	0.0	-1,339	0.0	-1,339	0.0
18	68.3	57.0	0	6.0	-2,297	1.1	-2,297	1.1	-2,297	1.1	-2,297	1.1
19	66.9	59.4	0	4.1	-3,802	1.0	-3,802	1.0	-3,802	1.0	-3,802	1.0
20	65.0	59.4	0	2.5	-4,265	0.1	-4,265	0.1	-4,265	0.1	-4,265	0.1
21	62.8	58.2	0	1.3	-5,884	0.0	-5,884	0.0	-5,884	0.0	-5,884	0.0
22	60.2	56.1	0	0.3	-6,705	0.0	-6,705	0.0	-6,705	0.0	-6,705	0.0
23	57.5	54.0	0	0.0	-8,065	0.0	-8,065	0.0	-8,065	0.0	-8,065	0.0
24	54.7	51.7	0	0.0	-9,546	0.0	-9,546	0.0	-9,546	0.0	-9,546	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OAOB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-14,125	0.0	-32,611	0.2	-58,165	0.0	-58,190	0.0	-58,190	0.0
2	43.2	41.1	-18,138	0.0	-48,658	0.0	-66,146	0.0	-66,164	0.0	-66,164	0.0
3	41.8	39.8	-30,211	0.0	-60,496	0.0	-72,641	0.0	-72,653	0.0	-72,653	0.0
4	40.7	38.7	-39,644	0.0	-69,730	0.0	-78,166	0.0	-78,174	0.0	-78,174	0.0
5	40.1	38.4	-46,586	0.0	-75,937	0.0	-81,796	0.0	-81,802	0.0	-81,802	0.0
6	39.9	38.4	-50,062	0.0	-80,348	0.0	-84,418	0.0	-84,422	0.0	-84,422	0.0
7	40.5	39.0	-50,887	0.0	-81,440	0.0	-84,267	0.0	-84,270	0.0	-84,270	0.0
8	42.2	40.7	-49,033	0.0	-79,496	0.0	-81,459	0.0	-81,461	0.0	-81,461	0.0
9	44.9	43.4	-38,269	0.0	-71,200	0.0	-72,564	0.0	-72,565	0.0	-72,565	0.0
10	48.2	45.8	-22,678	0.0	-57,793	0.0	-58,740	0.0	-58,741	0.0	-58,741	0.0
11	51.7	48.3	-10,324	0.0	-42,693	0.0	-43,350	0.0	-43,350	0.0	-43,350	0.0
12	55.0	50.7	-7,211	0.0	-28,245	0.0	-28,701	0.0	-28,701	0.0	-28,701	0.0
13	57.7	52.0	-3,860	0.0	-15,784	0.0	-16,100	0.0	-16,100	0.0	-16,100	0.0
14	59.5	52.6	0	0.0	-12,648	0.0	-12,648	0.0	-12,648	0.0	-12,648	0.0
15	60.1	52.7	0	2.9	-10,867	0.0	-10,867	0.0	-10,867	0.0	-10,867	0.0
16	59.9	52.6	0	6.4	-9,188	0.0	-9,188	0.0	-9,188	0.0	-9,188	0.0
17	59.2	52.1	0	5.9	-8,977	0.0	-8,977	0.0	-8,977	0.0	-8,977	0.0
18	58.2	51.8	0	3.7	-9,774	0.0	-9,774	0.0	-9,774	0.0	-9,774	0.0
19	56.8	52.2	0	2.0	-11,127	0.0	-11,127	0.0	-11,127	0.0	-11,127	0.0
20	55.0	51.4	0	0.7	-12,401	0.0	-12,401	0.0	-12,401	0.0	-12,401	0.0
21	53.1	50.1	-3,250	0.0	-14,940	0.0	-15,073	0.0	-15,074	0.0	-15,074	0.0
22	51.0	48.1	-9,145	0.0	-27,518	0.0	-27,595	0.0	-27,595	0.0	-27,595	0.0
23	48.9	46.2	-10,976	0.0	-38,795	0.0	-38,849	0.0	-38,849	0.0	-38,849	0.0
24	46.9	44.1	-12,666	0.0	-48,083	0.0	-48,120	0.0	-48,120	0.0	-48,120	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 21709 (1 BUILDING)

-----CARD 08-- Climatic Information -----
 Summer Winter Summer Summer Winter Summer Winter
Weather Clearness Clearness Design Design Design Building Ground Ground
Code Number Number Dry Bulb Wet Bulb Dry Bulb Orientation Reflect Reflect
AUGUSTA

-----CARD 09-- Load Simulation Periods-----
1st Month Last Month Peak 1st Month Last Month 1st Month Last Month
Cooling Cooling Cooling Summer Summer Daylight Daylight
Simulation Simulation Load Hr Period Period Savings Savings
APR OCT

-----CARD 10 -- Load Simulation Parameters-----
Cooling Heating Airflow Airflow Room Put Wall
Load Load Ventilation Input Output Circulation RA Load
Method Method Method Units Units Rate to Room
CLTD-CLF TETD-TA1 OAHIGH ACTUAL ACTUAL MED-RCR NO

----- Load Section Alternative #1 -----

---- Load Alternative ----
Number Description
1 DINNING FACILITY

-----CARD 20-- General Room Parameters -----
 Zone
Room Reference Room Floor Floor Const Plenum Acoustic Floor to Duplicate Duplicate Perimeter
Number Number Descrip Length Width Type Height Resistance Floor Floors Rooms per Depth
1 1 DINNING ROOM 7284 2 0 12

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	KITCHEN	3842.25		2	0		12			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50					HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				4			
2	1	YES				4			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	86.25	11		196	180			
1	2	92	11		196	270			
1	3	92	11		196	90			
2	1	37	11		196	270			
2	2	86.25	11		196	0			
2	3	37	11		196	90			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	20.25	10	1	1.03	.94					
1	2	3.75	1.5	102	1.03	.94					
1	3	3.75	1.5	102	1.03	.94					
2	1	3.75	1.5	9	1.03	.94					
2	2	3.75	1.5	22	1.03	.94					
2	3	3.75	1.5	9	1.03	.94					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						
2	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	25	PEOPLE	255	325	1.8	WATT-SF	ASHRAE2				
2	375	PEOPLE	255	325	1.5	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
2	1	MISS.	51.8	KW	FGHEAT						
2	2	MISS.GAS	280	MBH	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2					.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1	1	CFM-SF	1	CFM-SF						
2	1	CFM-SF	1	CFM-SF						

-----CARD 31-- Partition Parameters -----

Room Number	Partition Number	Partition Length	Partition Height	Partition U-Value	Const Type	Temp Flag	Cooling Temp	Heating Temp	Adjacent Room No
1	1	148	12	.61					2

Number	Description
1	MULTI-ZONE SYSTEMS

System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	MZ						
2	UH						

[illegible][illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

MZ MULTIZONE
UH UNIT HEATERS

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 75
24

Schedule Name: FGREAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: EON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 72
24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		100
24		


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*****
*****
**
**          T R A C E    6 0 0    A N A L Y S I S          **
**
**          by          **
**
*****
*****
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29717 (1 BUILDING) (TYPE 5B)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 13: 9:55 8/15/94
Dataset Name: FGTP55B .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==> Mo/Hr: 6/17 * Mo/Hr: 6/17 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 98/ 74/ 91.0 * OADB: 98 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	22,967	0		22,967	11.65	*	22,967	13.15	*	-12,031	-12,031	8.51
Glass Solar	97,200	0		97,200	49.29	*	97,200	55.67	*	0	0	0.00
Glass Cond	30,730	0		30,730	15.58	*	30,730	17.60	*	-68,413	-68,413	48.40
Wall Cond	17,575	0		17,575	8.91	*	17,575	10.07	*	-25,108	-25,108	17.76
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	10,392			10,392	5.27	*	6,121	3.51	*	-14,841	-14,841	10.50
Sub Total==>	178,864	0		178,864	90.69	*	174,593	100.00	*	-120,393	-120,393	85.17
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	18,353	9.31	*	0	0.00	*	0	-20,968	14.83
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	178,864	0	0	197,217	100.00	*	174,593	100.00	*	-120,393	-141,361	100.00

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR	Leaving DB/WB/HR	Gross Total	Glass (sf) (%)
	(Tons)	(Mbh)	(cfm)	Deg F Deg F Grains	Deg F Deg F Grains	Floor	
Main Clg	16.4	197.2	185.4	75.9 63.1 66.2	60.6 57.1 64.7	7,284	
Aux Clg	0.0	0.0	0.0	0.0 0.0 0.0	0.0 0.0 0.0	1,776	
Opt Vent	0.0	0.0	0.0	0.0 0.0 0.0	0.0 0.0 0.0	0	
Totals	16.4	197.2				7,284	0 0
						2,973	1,350 45

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	3.8	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent			Clg Cfm/Sqft	1.50	SAOB	60.6	77.9
Main Htg	-141.4	10,935	66.3	77.9	Infil	238	297	Clg Cfm/Ton	665.36	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	10,935	10,935	Clg Sqft/Ton	443.21	Return	75.0	68.0
Preheat	-0.0	10,935	66.3	60.6	Mincfm	0	0	Clg Btuh/Sqft	27.08	Ret/OA	75.9	66.3
Reheat	0.0	0	0.0	0.0	Return	10,935	10,935	No. People	28	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	420	420	Htg % OA	3.8	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.50	Fn BldTD	0.0	0.0
Total	-141.4				Auxil	0	0	Htg Btuh/Sqft	-19.41	Fn Frict	0.0	0.0

-----AIRFLOWS (cfm)-----

-----ENGINEERING CHECKS-----

-----TEMPERATURES (F)-----

System 2 Block 04 - UNIT HEATERS

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==) Mo/Hr: 0/ 0 * Mo/Hr: 0/ 0 * Mo/Hr: 13/ 1
Outside Air ==) OADB/WB/HR: 0/ 0/ 0.0 * OADB: 0 * OADB: 23

	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Perct Of Tot (%)	*	Space Sensible (Btuh)	Perct Of Tot (%)	*	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Perct Of Tot (%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	0	0		0	0.00	*	0	0.00	*	-6,346	-6,346	1.76
Glass Solar	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Glass Cond	0	0		0	0.00	*	0	0.00	*	-11,402	-11,402	3.17
Wall Cond	0	0		0	0.00	*	0	0.00	*	-23,792	-23,792	6.62
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	0			0	0.00	*	0	0.00	*	-8,800	-8,800	2.45
Sub Total==>	0	0		0	0.00	*	0	0.00	*	-50,341	-50,341	14.00
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	0	0.00	*	0	0.00	*	0	-309,281	86.00
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
Grand Total==>	0	0	0	0	0.00	*	0	0.00	*	-50,341	-359,623	100.00

-----COOLING COIL SELECTION-----

	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR Deg F Deg F Grains	Leaving DB/WB/HR Deg F Deg F Grains	Gross Total Floor	Glass (sf) (%) Part
Main Clg	0.0	0.0	0	0.0 0.0 0.0	0.0 0.0 0.0	3,842	0
Aux Clg	0.0	0.0	0	0.0 0.0 0.0	0.0 0.0 0.0	0	0
Opt Vent	0.0	0.0	0	0.0 0.0 0.0	0.0 0.0 0.0	0	0
Totals	0.0	0.0				3,842	225 13

-----AREAS-----

-----HEATING COIL SELECTION-----

	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating	Clg % OA	0.0	Type	Clg	Htg
Main Htg	-359.6	6,195	23.0	75.3	Vent	0	6,195	Clg Cfm/Sqft	0.00	SADB	0.0	75.3
Aux Htg	0.0	0	0.0	0.0	Infil	0	176	Clg Cfm/Ton	0.00	Plenum	0.0	68.0
Preheat	0.0	0	0.0	0.0	Supply	0	6,195	Clg Sqft/Ton	0.00	Return	0.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Sqft	0.00	Ret/OA	0.0	23.0
Humidif	0.0	0	0.0	0.0	Return	0	6,195	No. People	0	Runarnd	0.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	0	6,195	Htg % OA	100.0	Fn MtrTD	0.0	0.0
Total	-359.6				Rm Exh	0	0	Htg Cfm/Sqft	1.61	Fn BldTD	0.0	0.0
					Auxil	0	0	Htg Btuh/Sqft	-93.60	Fn Frict	0.0	0.0

-----AIRFLOWS (cfm)-----

-----ENGINEERING CHECKS-----

-----TEMPERATURES (F)-----

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-276,134	0.0	-349,014	0.0	-360,446	0.0	-360,448	0.0	-360,448	0.0
2	32.9	30.7	-279,523	0.0	-358,495	0.0	-366,457	0.0	-366,458	0.0	-366,458	0.0
3	33.1	31.3	-284,080	0.0	-360,253	0.0	-365,800	0.0	-365,801	0.0	-365,801	0.0
4	33.9	32.1	-287,860	0.0	-355,419	0.0	-359,284	0.0	-359,284	0.0	-359,284	0.0
5	35.2	33.5	-290,229	0.0	-345,791	0.0	-348,484	0.0	-348,485	0.0	-348,485	0.0
6	37.0	35.4	-285,547	0.0	-331,314	0.0	-333,190	0.0	-333,190	0.0	-333,190	0.0
7	39.0	37.6	-275,485	0.0	-314,646	0.0	-315,953	0.0	-315,953	0.0	-315,953	0.0
8	41.3	40.1	-258,144	0.0	-294,952	0.0	-295,863	0.0	-295,863	0.0	-295,863	0.0
9	43.7	42.5	-229,664	0.0	-272,663	0.0	-273,298	0.0	-273,298	0.0	-273,298	0.0
10	46.1	44.0	-191,878	0.0	-248,052	0.0	-248,494	0.0	-248,494	0.0	-248,494	0.0
11	48.4	45.0	-147,920	0.0	-222,892	0.0	-223,200	0.0	-223,200	0.0	-223,200	0.0
12	50.5	45.6	-103,374	0.0	-199,432	0.0	-199,646	0.0	-199,646	0.0	-199,646	0.0
13	52.2	46.1	-81,774	0.0	-180,429	0.0	-180,578	0.0	-180,578	0.0	-180,578	0.0
14	53.5	46.4	-66,440	0.0	-164,127	0.0	-164,250	0.0	-164,250	0.0	-164,250	0.0
15	54.3	46.3	-59,591	0.0	-147,845	0.0	-147,917	0.0	-147,917	0.0	-147,917	0.0
16	54.6	46.1	-61,752	3.7	-140,232	0.0	-140,282	0.0	-140,282	0.0	-140,282	0.0
17	54.0	45.9	-71,603	5.3	-142,395	0.0	-142,430	0.0	-142,430	0.0	-142,430	0.0
18	52.5	45.0	-90,670	3.0	-155,875	0.0	-155,900	0.0	-155,900	0.0	-155,900	0.0
19	50.1	44.8	-113,131	1.1	-181,405	0.0	-181,422	0.0	-181,422	0.0	-181,422	0.0
20	47.1	43.3	-135,940	0.0	-214,944	0.0	-214,956	0.0	-214,956	0.0	-214,956	0.0
21	43.7	40.4	-154,522	0.0	-251,399	0.0	-251,407	0.0	-251,407	0.0	-251,407	0.0
22	40.4	37.3	-172,029	0.0	-287,868	0.0	-287,873	0.0	-287,873	0.0	-287,873	0.0
23	37.3	34.9	-188,085	0.0	-320,311	0.0	-320,315	0.0	-320,315	0.0	-320,315	0.0
24	34.9	32.6	-211,657	0.2	-344,840	0.0	-344,843	0.0	-344,843	0.0	-344,843	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-233,697	0.0	-261,139	0.3	-280,995	0.0	-281,000	0.0	-281,000	0.0
2	39.7	37.1	-245,176	0.0	-289,740	0.0	-302,515	0.0	-302,519	0.0	-302,519	0.0
3	37.8	35.1	-256,830	0.0	-313,523	0.0	-322,420	0.0	-322,422	0.0	-322,422	0.0
4	36.3	33.8	-265,698	0.0	-331,952	0.0	-338,149	0.0	-338,150	0.0	-338,150	0.0
5	35.1	32.6	-269,849	0.0	-346,632	0.0	-350,948	0.0	-350,950	0.0	-350,950	0.0
6	34.4	32.0	-268,208	0.0	-355,652	0.0	-358,658	0.0	-358,659	0.0	-358,659	0.0
7	34.1	31.9	-260,576	0.0	-360,353	0.0	-362,446	0.0	-362,447	0.0	-362,447	0.0
8	34.6	32.4	-244,473	0.0	-356,730	0.0	-358,188	0.0	-358,189	0.0	-358,189	0.0
9	36.0	33.8	-217,820	0.0	-341,989	0.0	-343,005	0.0	-343,005	0.0	-343,005	0.0
10	38.2	34.7	-180,302	0.0	-317,124	0.0	-317,831	0.0	-317,831	0.0	-317,831	0.0
11	40.9	36.2	-131,667	0.0	-286,813	0.0	-287,305	0.0	-287,305	0.0	-287,305	0.0
12	43.9	37.4	-103,681	0.0	-254,195	0.0	-254,537	0.0	-254,537	0.0	-254,537	0.0
13	46.9	39.4	-83,750	0.0	-222,472	0.0	-222,710	0.0	-222,710	0.0	-222,710	0.0
14	49.7	41.4	-69,756	0.0	-193,281	0.0	-193,446	0.0	-193,446	0.0	-193,446	0.0
15	51.8	42.8	-62,721	2.3	-166,816	0.0	-166,931	0.0	-166,931	0.0	-166,931	0.0
16	53.2	43.9	-64,758	5.9	-147,211	0.0	-147,290	0.0	-147,290	0.0	-147,290	0.0
17	53.7	44.2	-72,850	6.3	-140,272	0.0	-140,272	0.0	-140,272	0.0	-140,272	0.0
18	53.4	44.4	-89,206	5.3	-141,955	0.0	-141,955	0.0	-141,955	0.0	-141,955	0.0
19	52.7	44.4	-110,759	2.6	-147,995	0.0	-147,995	0.0	-147,995	0.0	-147,995	0.0
20	51.5	45.2	-132,111	0.7	-164,437	0.0	-164,468	0.0	-164,468	0.0	-164,468	0.0
21	50.0	44.6	-150,041	0.0	-183,987	0.0	-184,008	0.0	-184,008	0.0	-184,008	0.0
22	48.1	43.3	-166,481	0.0	-207,216	0.0	-207,231	0.0	-207,231	0.0	-207,231	0.0
23	46.1	41.8	-179,806	0.0	-231,259	0.0	-231,269	0.0	-231,269	0.0	-231,269	0.0
24	43.9	40.1	-195,046	0.0	-255,842	0.0	-255,849	0.0	-255,849	0.0	-255,849	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-118,676	0.0	-153,179	0.0	-153,179	0.0	-153,179	0.0	-153,179	0.0
2	48.7	44.6	-132,767	0.0	-172,594	0.0	-180,454	0.0	-180,454	0.0	-180,454	0.0
3	46.6	42.9	-145,291	0.0	-202,366	0.2	-209,686	0.0	-209,686	0.0	-209,686	0.0
4	44.9	41.4	-156,570	0.0	-229,292	0.0	-234,102	0.0	-234,102	0.0	-234,102	0.0
5	43.9	40.8	-161,827	0.0	-245,858	0.0	-249,208	0.0	-249,208	0.0	-249,208	0.0
6	43.5	40.8	-160,062	0.0	-255,110	0.0	-257,444	0.0	-257,444	0.0	-257,444	0.0
7	44.0	41.4	-151,622	0.0	-254,464	0.0	-256,090	0.0	-256,090	0.0	-256,090	0.0
8	45.4	42.7	-127,836	0.0	-241,598	0.0	-242,731	0.0	-242,731	0.0	-242,731	0.0
9	47.7	44.3	-90,098	0.0	-216,046	0.0	-216,835	0.0	-216,835	0.0	-216,835	0.0
10	50.6	45.8	-60,281	0.0	-182,420	0.0	-182,969	0.0	-182,969	0.0	-182,969	0.0
11	53.9	47.4	-26,997	0.0	-142,442	0.0	-142,824	0.0	-142,824	0.0	-142,824	0.0
12	57.4	49.0	0	0.0	-108,711	0.0	-108,711	0.0	-108,711	0.0	-108,711	0.0
13	60.7	50.8	0	6.2	-83,983	0.0	-83,983	0.0	-83,983	0.0	-83,983	0.0
14	63.6	52.7	0	7.1	-60,834	0.0	-60,834	0.0	-60,834	0.0	-60,834	0.0
15	65.9	53.7	0	8.4	-43,320	0.0	-43,320	0.0	-43,320	0.0	-43,320	0.0
16	67.3	54.4	0	9.7	-31,274	0.0	-31,274	0.0	-31,274	0.0	-31,274	0.0
17	67.8	54.6	0	10.1	-26,910	3.5	-26,910	3.5	-26,910	3.5	-26,910	3.5
18	67.4	54.8	0	9.5	-29,749	3.5	-29,749	3.5	-29,749	3.5	-29,749	3.5
19	66.4	55.2	0	6.4	-38,197	2.0	-38,197	2.0	-38,197	2.0	-38,197	2.0
20	64.7	56.0	0	4.3	-51,937	0.8	-51,937	0.8	-51,937	0.8	-51,937	0.8
21	62.5	56.0	-40,817	2.6	-68,786	0.0	-68,786	0.0	-68,786	0.0	-68,786	0.0
22	60.0	54.1	-73,980	1.3	-87,510	0.0	-87,510	0.0	-87,510	0.0	-87,510	0.0
23	57.1	51.9	-91,141	0.0	-109,189	0.0	-109,189	0.0	-109,189	0.0	-109,189	0.0
24	54.2	49.4	-102,890	0.0	-130,964	0.0	-130,964	0.0	-130,964	0.0	-130,964	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	-36,504	0.0	-51,787	0.0	-76,351	0.0	-76,351	0.0	-76,351	0.0
2	58.9	54.9	-46,586	0.0	-92,209	0.0	-92,209	0.0	-92,209	0.0	-92,209	0.0
3	57.0	53.5	-55,090	0.0	-106,715	0.0	-106,715	0.0	-106,715	0.0	-106,715	0.0
4	55.4	52.4	-60,652	0.0	-119,751	0.0	-119,751	0.0	-119,751	0.0	-119,751	0.0
5	54.2	51.4	-64,042	0.0	-129,282	0.0	-129,282	0.0	-129,282	0.0	-129,282	0.0
6	53.5	50.9	-61,595	0.0	-135,243	0.0	-135,243	0.0	-135,243	0.0	-135,243	0.0
7	53.2	51.1	-53,519	0.0	-142,153	0.0	-142,564	0.0	-142,564	0.0	-142,564	0.0
8	53.9	51.5	-36,040	0.0	-138,356	0.0	-138,654	0.0	-138,654	0.0	-138,654	0.0
9	55.9	52.1	-12,620	0.0	-117,347	0.0	-117,347	0.0	-117,347	0.0	-117,347	0.0
10	58.9	53.2	0	5.4	-92,839	0.0	-92,839	0.0	-92,839	0.0	-92,839	0.0
11	62.6	55.2	0	7.1	-64,146	0.0	-64,146	0.0	-64,146	0.0	-64,146	0.0
12	66.5	57.3	0	8.0	-34,702	0.0	-34,702	0.0	-34,702	0.0	-34,702	0.0
13	70.2	59.6	0	8.3	-6,230	0.0	-6,230	0.0	-6,230	0.0	-6,230	0.0
14	73.2	61.0	0	9.4	0	2.9	0	2.8	0	2.8	0	2.8
15	75.2	62.2	0	10.7	0	5.6	0	5.6	0	5.6	0	5.6
16	75.9	62.2	0	11.5	0	5.8	0	5.8	0	5.8	0	5.8
17	75.6	62.0	0	12.0	0	6.3	0	6.4	0	6.4	0	6.4
18	74.9	61.7	0	11.6	0	6.1	0	6.1	0	6.1	0	6.1
19	73.7	62.0	0	9.2	0	5.0	0	5.0	0	5.0	0	5.0
20	72.1	62.4	0	6.8	0	3.4	0	3.4	0	3.4	0	3.4
21	70.2	63.3	0	5.0	0	2.5	0	2.5	0	2.5	0	2.5
22	68.0	62.5	0	3.6	0	1.5	0	1.5	0	1.5	0	1.5
23	65.7	60.5	0	2.5	-32,414	0.5	-32,414	0.5	-32,414	0.5	-32,414	0.5
24	63.4	58.5	0	1.6	-58,241	0.0	-58,241	0.0	-58,241	0.0	-58,241	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

May	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	2.4	0	0.9	0	1.0	0	1.0
2	65.7	61.5	0	1.9	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	1.2	0	0.0	-39,857	0.0	-39,857	0.0
4	61.8	58.4	0	0.8	-7,909	0.0	-67,836	0.0	-67,836	0.0
5	60.5	57.1	-9,571	0.3	-78,131	0.0	-78,131	0.0	-78,131	0.0
6	59.7	56.5	-8,680	0.2	-85,578	0.0	-85,578	0.0	-85,578	0.0
7	59.4	56.5	0	1.8	-87,121	0.0	-87,121	0.0	-87,121	0.0
8	60.1	56.3	0	3.9	-81,436	0.0	-81,436	0.0	-81,436	0.0
9	62.4	56.3	0	6.1	-63,246	0.0	-63,246	0.0	-63,246	0.0
10	65.7	57.2	0	7.9	-36,921	0.0	-36,921	0.0	-36,921	0.0
11	69.9	58.9	0	9.3	-5,069	2.3	-5,069	2.4	-5,069	2.4
12	74.3	60.9	0	10.0	0	4.6	0	4.7	0	4.7
13	78.5	63.7	0	10.3	0	5.3	0	5.4	0	5.4
14	81.9	65.3	0	11.4	0	6.5	0	6.6	0	6.6
15	84.1	66.9	0	12.7	0	7.8	0	7.8	0	7.8
16	84.9	67.1	0	13.5	0	8.3	0	8.3	0	8.3
17	84.6	67.3	0	14.0	0	8.8	0	8.8	0	8.8
18	83.8	67.1	0	13.7	0	8.6	0	8.7	0	8.7
19	82.4	67.5	0	11.9	0	7.7	0	7.7	0	7.7
20	80.6	68.9	0	9.2	0	6.0	0	6.0	0	6.0
21	78.5	71.0	0	7.4	0	5.1	0	5.1	0	5.1
22	76.1	69.9	0	5.9	0	4.0	0	4.0	0	4.0
23	73.4	68.0	0	4.5	0	2.9	0	2.9	0	2.9
24	70.8	65.5	0	3.5	0	1.9	0	1.9	0	1.9

June	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	5.7	0	2.8	0	3.2	0	3.2
2	72.6	68.4	0	4.7	0	2.2	0	2.3	0	2.3
3	70.9	67.3	0	3.9	0	1.1	0	1.2	0	1.2
4	69.6	66.5	0	3.3	0	0.8	0	0.8	0	0.8
5	68.7	65.8	0	3.0	0	0.2	0	0.2	0	0.2
6	68.5	65.7	0	2.6	0	0.0	0	0.0	0	0.0
7	69.0	66.3	0	4.5	0	0.6	0	0.6	0	0.6
8	70.6	66.9	0	7.1	0	2.7	0	2.8	0	2.8
9	73.0	67.7	0	9.2	0	4.3	0	4.4	0	4.4
10	76.1	68.1	0	10.7	0	6.1	0	6.1	0	6.1
11	79.5	69.1	0	12.0	0	7.1	0	7.1	0	7.1
12	82.9	70.1	0	12.4	0	7.8	0	7.8	0	7.8
13	86.0	71.0	0	12.9	0	8.3	0	8.3	0	8.3
14	88.4	72.5	0	13.7	0	9.5	0	9.5	0	9.5
15	90.0	74.0	0	14.8	0	11.0	0	11.0	0	11.0
16	90.5	73.7	0	15.7	0	11.0	0	11.0	0	11.0
17	90.3	74.2	0	16.2	0	11.5	0	11.5	0	11.5
18	89.4	73.9	0	16.0	0	11.3	0	11.3	0	11.3
19	88.1	74.5	0	14.5	0	10.4	0	10.4	0	10.4
20	86.4	75.3	0	11.9	0	8.4	0	8.4	0	8.4
21	84.3	76.5	0	10.1	0	7.4	0	7.4	0	7.4
22	81.9	75.7	0	8.3	0	6.2	0	6.2	0	6.2
23	79.5	74.0	0	7.1	0	5.2	0	5.2	0	5.2
24	77.0	72.1	0	6.1	0	4.2	0	4.2	0	4.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

July	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5		0		5.8		0		2.0		0		2.3		0		2.3		0		2.3
2	72.4	69.4		0		4.7		0		1.8		0		1.9		0		1.9		0		1.9
3	71.3	68.4		0		4.2		0		1.1		0		1.1		0		1.1		0		1.1
4	70.5	67.7		0		3.6		0		0.4		0		0.5		0		0.5		0		0.5
5	70.0	67.4		0		3.3		0		0.2		0		0.2		0		0.2		0		0.2
6	69.9	67.5		0		2.8		0		0.0		0		0.0		0		0.0		0		0.0
7	70.3	68.0		0		4.5		0		0.4		0		0.4		0		0.4		0		0.4
8	71.7	69.0		0		7.2		0		2.9		0		2.9		0		2.9		0		2.9
9	73.7	69.5		0		8.9		0		4.7		0		4.7		0		4.7		0		4.7
10	76.2	70.6		0		10.5		0		6.6		0		6.6		0		6.6		0		6.6
11	78.9	71.8		0		11.8		0		7.5		0		7.5		0		7.5		0		7.5
12	81.4	73.0		0		12.3		0		8.0		0		8.0		0		8.0		0		8.0
13	83.4	74.4		0		12.6		0		8.4		0		8.4		0		8.4		0		8.4
14	84.8	74.8		0		13.3		0		9.1		0		9.1		0		9.1		0		9.1
15	85.2	75.0		0		14.4		0		10.2		0		10.2		0		10.2		0		10.2
16	85.1	75.0		0		15.3		0		10.1		0		10.1		0		10.1		0		10.1
17	84.6	74.7		0		15.9		0		10.4		0		10.4		0		10.4		0		10.4
18	83.8	74.6		0		15.7		0		10.3		0		10.3		0		10.3		0		10.3
19	82.7	74.6		0		14.4		0		9.1		0		9.1		0		9.1		0		9.1
20	81.4	74.4		0		11.6		0		7.5		0		7.5		0		7.5		0		7.5
21	79.9	74.9		0		9.7		0		6.1		0		6.1		0		6.1		0		6.1
22	78.4	74.0		0		8.2		0		5.2		0		5.2		0		5.2		0		5.2
23	76.8	72.7		0		7.2		0		4.1		0		4.1		0		4.1		0		4.1
24	75.2	71.6		0		6.3		0		3.2		0		3.2		0		3.2		0		3.2

August			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0		5.7		0		2.5		0		2.9		0		2.9
2	73.2	70.3		0		4.5		0		1.9		0		2.1		0		2.1
3	71.7	68.9		0		4.0		0		1.5		0		1.6		0		1.6
4	70.4	67.8		0		3.4		0		0.9		0		0.9		0		0.9
5	69.5	66.8		0		2.8		0		0.2		0		0.2		0		0.2
6	68.9	66.4		0		2.6		0		0.0		0		0.0		0		0.0
7	68.7	66.4		0		3.5		0		0.0		-3,171		0.0		-3,171		0.0
8	69.2	66.8		0		6.1		0		1.8		-13,668		1.8		-13,668		1.8
9	70.8	67.7		0		8.5		0		3.7		0		3.7		0		3.7
10	73.2	67.7		0		10.2		0		5.7		0		5.7		0		5.7
11	76.2	68.8		0		11.7		0		6.6		0		6.6		0		6.6
12	79.3	70.3		0		12.2		0		7.2		0		7.2		0		7.2
13	82.3	72.2		0		12.9		0		8.0		0		8.0		0		8.0
14	84.7	73.7		0		13.8		0		9.0		0		9.0		0		9.0
15	86.3	74.6		0		14.8		0		10.3		0		10.3		0		10.3
16	86.8	75.1		0		15.9		0		10.8		0		10.8		0		10.8
17	86.6	75.1		0		16.2		0		10.9		0		10.9		0		10.9
18	86.0	75.3		0		15.8		0		11.1		0		11.1		0		11.1
19	85.1	76.0		0		13.5		0		9.7		0		9.7		0		9.7
20	83.8	76.8		0		11.3		0		7.9		0		7.9		0		7.9
21	82.3	77.2		0		9.6		0		6.9		0		6.9		0		6.9
22	80.6	76.3		0		8.2		0		5.9		0		5.9		0		5.9
23	78.7	75.3		0		7.0		0		4.8		0		4.8		0		4.8
24	76.8	73.7		0		6.0		0		3.8		0		3.8		0		3.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	3.8	0	0.9	0	1.0	0	1.0	0	1.0
2	67.6	65.0	0	2.8	0	0.2	0	0.2	0	0.2	0	0.2
3	65.8	63.4	0	2.0	0	0.0	-15,010	0.0	-15,010	0.0	-15,010	0.0
4	64.3	62.2	0	1.3	0	0.0	-50,954	0.0	-50,954	0.0	-50,954	0.0
5	63.1	61.1	0	1.1	-60,367	0.0	-60,367	0.0	-60,367	0.0	-60,367	0.0
6	62.4	60.3	0	0.6	-66,321	0.0	-66,321	0.0	-66,321	0.0	-66,321	0.0
7	62.2	60.2	0	0.6	-69,428	0.0	-69,428	0.0	-69,428	0.0	-69,428	0.0
8	62.9	60.9	0	3.4	-63,270	0.0	-63,270	0.0	-63,270	0.0	-63,270	0.0
9	64.7	61.8	0	5.9	-49,890	0.0	-49,890	0.0	-49,890	0.0	-49,890	0.0
10	67.6	62.1	0	8.3	-26,960	0.0	-26,960	0.0	-26,960	0.0	-26,960	0.0
11	71.1	63.1	0	9.4	0	2.7	0	2.9	0	2.9	0	2.9
12	74.8	64.6	0	10.2	0	5.8	0	6.1	0	6.1	0	6.1
13	78.3	66.7	0	10.9	0	6.4	0	6.4	0	6.4	0	6.4
14	81.2	68.4	0	12.1	0	7.5	0	7.6	0	7.6	0	7.6
15	83.0	70.0	0	13.4	0	8.5	0	8.5	0	8.5	0	8.5
16	83.7	70.5	0	14.6	0	9.3	0	9.3	0	9.3	0	9.3
17	83.4	70.5	0	14.6	0	9.3	0	9.3	0	9.3	0	9.3
18	82.8	70.9	0	13.4	0	8.6	0	8.6	0	8.6	0	8.6
19	81.6	72.7	0	10.7	0	7.0	0	7.0	0	7.0	0	7.0
20	80.1	74.7	0	8.9	0	6.0	0	6.0	0	6.0	0	6.0
21	78.3	74.1	0	7.4	0	4.9	0	4.9	0	4.9	0	4.9
22	76.3	72.4	0	6.1	0	3.9	0	3.9	0	3.9	0	3.9
23	74.1	70.7	0	4.9	0	2.8	0	2.8	0	2.8	0	2.8
24	71.8	68.9	0	3.9	0	1.9	0	1.9	0	1.9	0	1.9

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-145,010	0.0	-145,010	0.0	-145,010	0.0	-145,010	0.0
2	50.1	48.6	-105,468	0.0	-160,894	0.0	-160,894	0.0	-160,894	0.0	-160,894	0.0
3	48.4	46.9	-113,928	0.0	-180,258	0.0	-188,751	0.0	-188,751	0.0	-188,751	0.0
4	47.1	45.8	-119,947	0.0	-203,012	0.0	-209,033	0.0	-209,033	0.0	-209,033	0.0
5	46.3	44.8	-124,009	0.0	-218,308	0.0	-222,507	0.0	-222,507	0.0	-222,507	0.0
6	46.0	44.5	-121,490	0.0	-227,226	0.0	-230,153	0.0	-230,153	0.0	-230,153	0.0
7	46.8	45.3	-112,535	0.0	-223,873	0.0	-225,913	0.0	-225,913	0.0	-225,913	0.0
8	48.9	47.5	-95,853	0.0	-204,910	0.0	-206,332	0.0	-206,332	0.0	-206,332	0.0
9	52.2	49.9	-69,887	0.0	-170,144	0.0	-171,135	0.0	-171,135	0.0	-171,135	0.0
10	56.2	52.5	-40,404	0.0	-125,797	0.0	-126,487	0.0	-126,487	0.0	-126,487	0.0
11	60.4	54.4	-7,479	0.0	-88,499	0.0	-88,499	0.0	-88,499	0.0	-88,499	0.0
12	64.4	56.0	0	2.5	-58,319	0.0	-58,319	0.0	-58,319	0.0	-58,319	0.0
13	67.7	57.3	0	6.6	-32,610	0.0	-32,610	0.0	-32,610	0.0	-32,610	0.0
14	69.8	58.2	0	7.8	-15,127	0.0	-15,127	0.0	-15,127	0.0	-15,127	0.0
15	70.6	58.1	0	9.1	-7,572	0.0	-7,572	0.0	-7,572	0.0	-7,572	0.0
16	70.3	57.5	0	10.1	-8,306	3.8	-8,306	3.7	-8,306	3.7	-8,306	3.7
17	69.5	57.3	0	10.0	-13,386	4.4	-13,386	4.4	-13,386	4.4	-13,386	4.4
18	68.2	57.7	0	7.5	-23,611	3.0	-23,611	3.0	-23,611	3.0	-23,611	3.0
19	66.5	60.6	0	5.4	-36,594	1.7	-36,594	1.7	-36,594	1.7	-36,594	1.7
20	64.4	60.8	0	3.7	-52,836	0.8	-52,836	0.8	-52,836	0.8	-52,836	0.8
21	62.1	59.4	0	2.2	-70,772	0.0	-70,772	0.0	-70,772	0.0	-70,772	0.0
22	59.6	57.3	-43,785	1.1	-89,710	0.0	-89,710	0.0	-89,710	0.0	-89,710	0.0
23	57.0	55.1	-72,783	0.1	-109,096	0.0	-109,096	0.0	-109,096	0.0	-109,096	0.0
24	54.5	52.7	-84,245	0.0	-127,720	0.0	-127,720	0.0	-127,720	0.0	-127,720	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
 MULTI-ZONE SYSTEMS

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-120,041	0.0	-148,178	0.0	-148,178	0.0	-148,178	0.0	-148,178	0.0
2	49.4	47.3	-130,472	0.0	-167,531	0.0	-176,162	0.0	-176,162	0.0	-176,162	0.0
3	47.2	45.3	-139,453	0.0	-199,200	0.0	-206,041	0.0	-206,041	0.0	-206,041	0.0
4	45.3	43.4	-152,958	0.0	-227,064	0.0	-231,833	0.0	-231,833	0.0	-231,833	0.0
5	43.9	42.2	-163,707	0.0	-247,141	0.0	-250,466	0.0	-250,466	0.0	-250,466	0.0
6	43.0	41.4	-164,010	0.0	-260,660	0.0	-262,978	0.0	-262,978	0.0	-262,978	0.0
7	42.7	41.2	-155,510	0.0	-267,159	0.0	-268,775	0.0	-268,775	0.0	-268,775	0.0
8	43.5	42.0	-134,822	0.0	-261,963	0.0	-263,090	0.0	-263,090	0.0	-263,090	0.0
9	45.9	44.0	-96,152	0.0	-237,605	0.0	-238,390	0.0	-238,390	0.0	-238,390	0.0
10	49.4	46.6	-62,166	0.0	-198,820	0.0	-199,367	0.0	-199,367	0.0	-199,367	0.0
11	53.8	48.6	-26,661	0.0	-150,742	0.0	-151,124	0.0	-151,124	0.0	-151,124	0.0
12	58.4	50.6	0	0.0	-105,842	0.0	-105,842	0.0	-105,842	0.0	-105,842	0.0
13	62.8	52.6	0	0.1	-72,662	0.0	-72,662	0.0	-72,662	0.0	-72,662	0.0
14	66.3	54.5	0	6.7	-46,145	0.0	-46,145	0.0	-46,145	0.0	-46,145	0.0
15	68.7	55.7	0	8.0	-26,752	0.0	-26,752	0.0	-26,752	0.0	-26,752	0.0
16	69.5	56.1	0	8.9	-19,663	0.0	-19,663	0.0	-19,663	0.0	-19,663	0.0
17	69.2	55.8	0	8.3	-20,583	0.0	-20,583	0.0	-20,583	0.0	-20,583	0.0
18	68.3	57.0	0	6.0	-27,727	1.0	-27,727	1.0	-27,727	1.0	-27,727	1.0
19	66.9	59.4	0	4.1	-38,854	1.0	-38,854	1.0	-38,854	1.0	-38,854	1.0
20	65.0	59.4	0	2.4	-52,375	0.0	-52,375	0.0	-52,375	0.0	-52,375	0.0
21	62.8	58.2	-44,374	1.2	-69,115	0.0	-69,115	0.0	-69,115	0.0	-69,115	0.0
22	60.2	56.1	-78,629	0.2	-87,805	0.0	-87,805	0.0	-87,805	0.0	-87,805	0.0
23	57.5	54.0	-95,873	0.0	-107,722	0.0	-107,722	0.0	-107,722	0.0	-107,722	0.0
24	54.7	51.7	-108,665	0.0	-128,447	0.0	-128,447	0.0	-128,447	0.0	-128,447	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-152,270	0.0	-221,547	0.3	-245,991	0.0	-246,018	0.0	-246,018	0.0
2	43.2	41.1	-165,679	0.0	-249,214	0.0	-265,663	0.0	-265,683	0.0	-265,683	0.0
3	41.8	39.8	-182,606	0.0	-270,336	0.0	-281,797	0.0	-281,810	0.0	-281,810	0.0
4	40.7	38.7	-195,889	0.0	-286,913	0.0	-294,899	0.0	-294,908	0.0	-294,908	0.0
5	40.1	38.4	-204,706	0.0	-296,550	0.0	-302,116	0.0	-302,122	0.0	-302,122	0.0
6	39.9	38.4	-204,581	0.0	-301,125	0.0	-305,004	0.0	-305,009	0.0	-305,009	0.0
7	40.5	39.0	-198,381	0.0	-297,628	0.0	-300,331	0.0	-300,334	0.0	-300,334	0.0
8	42.2	40.7	-183,996	0.0	-283,165	0.0	-285,048	0.0	-285,050	0.0	-285,050	0.0
9	44.9	43.4	-155,214	0.0	-257,368	0.0	-258,680	0.0	-258,682	0.0	-258,682	0.0
10	48.2	45.8	-118,901	0.0	-223,198	0.0	-224,112	0.0	-224,113	0.0	-224,113	0.0
11	51.7	48.3	-81,803	0.0	-185,345	0.0	-185,981	0.0	-185,982	0.0	-185,982	0.0
12	55.0	50.7	-56,696	0.0	-145,977	0.0	-146,420	0.0	-146,421	0.0	-146,421	0.0
13	57.7	52.0	-36,850	0.0	-114,832	0.0	-115,141	0.0	-115,141	0.0	-115,141	0.0
14	59.5	52.6	-22,203	0.0	-98,560	0.0	-98,560	0.0	-98,560	0.0	-98,560	0.0
15	60.1	52.7	-15,478	2.9	-92,655	0.0	-92,655	0.0	-92,655	0.0	-92,655	0.0
16	59.9	52.6	-17,946	6.4	-92,350	0.0	-92,350	0.0	-92,350	0.0	-92,350	0.0
17	59.2	52.1	-27,749	5.9	-96,950	0.0	-96,950	0.0	-96,950	0.0	-96,950	0.0
18	58.2	51.8	-45,286	3.7	-104,620	0.0	-104,620	0.0	-104,620	0.0	-104,620	0.0
19	56.8	52.2	-66,070	2.0	-115,595	0.0	-115,595	0.0	-115,595	0.0	-115,595	0.0
20	55.0	51.4	-87,040	0.6	-129,240	0.0	-129,240	0.0	-129,240	0.0	-129,240	0.0
21	53.1	50.1	-105,294	0.0	-146,970	0.0	-147,081	0.0	-147,081	0.0	-147,081	0.0
22	51.0	48.1	-121,173	0.0	-173,655	0.0	-173,736	0.0	-173,736	0.0	-173,736	0.0
23	48.9	46.2	-134,001	0.0	-199,216	0.0	-199,273	0.0	-199,273	0.0	-199,273	0.0
24	46.9	44.1	-143,939	0.0	-222,178	0.0	-222,218	0.0	-222,218	0.0	-222,218	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 29717 (1 BUILDING) (TYPE 5B)

-----CARD 08-- Climatic Information-----
Summer Winter Summer Summer Winter Summer Winter
Weather Clearness Clearness Design Design Design Building Ground Ground
Code Number Number Dry Bulb Wet Bulb Dry Bulb Orientation Reflect Reflect
AUGUSTA

-----CARD 09-- Load Simulation Periods-----
1st Month Last Month Peak 1st Month Last Month 1st Month Last Month
Cooling Cooling Cooling Summer Summer Daylight Daylight
Simulation Simulation Load Hr Period Period Savings Savings
APR OCT

-----CARD 10 -- Load Simulation Parameters-----
Cooling Heating Airflow Airflow Room Put Wall
Load Load Ventilation Input Output Circulation RA Load
Method Method Method Units Units Rate to Room
CLTD-CLF TETD-TAI OAHIGH ACTUAL ACTUAL MED-RCR NO

----- Load Section Alternative #1 -----

---- Load Alternative ----
Number Description
1 DINNING FACILITY

-----CARD 20-- General Room Parameters-----
Zone
Room Reference Room Floor Floor Const Plenum Acoustic Floor to Duplicate Duplicate Perimeter
Number Number Descrip Length Width Type Height Resistance Height Multiplier Rooms per Depth
1 1 DINNING ROOM 7284 2 0 12

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	KITCHEN	3842.25		2	0		12			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	Heating T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50					HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				4			
2	1	YES				4			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	86.25	11		196	180			
1	2	92	11		196	270			
1	3	92	11		196	90			
2	1	37	11		196	270			
2	2	86.25	11		196	0			
2	3	37	11		196	90			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	20.25	10	1	1.03	.94					
1	2	3.75	1.5	102	1.03	.94					
1	3	3.75	1.5	102	1.03	.94					
2	1	3.75	1.5	9	1.03	.94					
2	2	3.75	1.5	22	1.03	.94					
2	3	3.75	1.5	9	1.03	.94					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						
2	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	28	PEOPLE	255	325	1.8	WATT-SF	ASHRAE2				
2	413	PEOPLE	255	325	1.5	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Energy Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
2	1	MISS.	57	KW	FGHEAT						
2	2	MISS.GAS	308	MBH	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
1	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
1	Value	Units	Value	Units	Value	Units	Value	Units		
1	1	CFM-SF	1	CFM-SF						
2	1	CFM-SF	1	CFM-SF						

-----CARD 31-- Partition Parameters -----

Room Number	Partition Number	Partition Length	Partition Height	Partition U-Value	Const Type	Temp Flag	Cooling Temp	Heating Temp	Adjacent Room No
1	1	148	12	.61					2

Number	Description
1	MULTI-ZONE SYSTEMS

System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	MZ						
2	UH						

```

-----CARD 41-- Zone Assignment -----
System
Set          Ref #1      Ref #2      Ref #3      Ref #4      Ref #5      Ref #6
Number      Begin   End    Begin   End    Begin   End    Begin   End    Begin   End    Begin   End
1           1       1
2           2       2

```

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHED FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

MZ MULTIZONE
UH UNIT HEATERS

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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*****
*****
**
**          T R A C E    6 0 0    A N A L Y S I S          **
**
**          by          **
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*****
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```

ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29709 (1 BUILDING) (TYPE 5C)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 13:29:45 8/15/94
Dataset Name: FGTYP55C .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==>			Mo/Hr: 6/17			*	Mo/Hr: 6/17			*	Mo/Hr: 13/ 1		
Outside Air ==>			OADB/WB/HR: 98/ 74/ 91.0			*	OADB: 98			*	OADB: 23		
						*				*			
	Space	Ret. Air	Ret. Air	Net	Percent	*	Space	Percent	*	Space Peak	Coil Peak	Percent	
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot	
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)	
Envelope Loads						*			*				
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00	
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00	
Roof Cond	22,967	0		22,967	12.34	*	22,967	13.15	*	-12,031	-12,031	9.35	
Glass Solar	97,200	0		97,200	52.24	*	97,200	55.67	*	0	0	0.00	
Glass Cond	30,730	0		30,730	16.51	*	30,730	17.60	*	-68,413	-68,413	53.19	
Wall Cond	17,575	0		17,575	9.45	*	17,575	10.07	*	-25,108	-25,108	19.52	
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00	
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00	
Infiltration	10,392			10,392	5.58	*	6,121	3.51	*	-14,841	-14,841	11.54	
Sub Total==>	178,864	0		178,864	96.13	*	174,593	100.00	*	-120,393	-120,393	93.60	
Internal Loads						*			*				
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00	
People	0			0	0.00	*	0	0.00	*	0	0	0.00	
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00	
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00	
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00	
Outside Air	0	0	0	7,210	3.87	*	0	0.00	*	0	-8,238	6.40	
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00	
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00	
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00	
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00	
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00	
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00	
Grand Total==>	178,864	0	0	186,074	100.00	*	174,593	100.00	*	-120,393	-128,630	100.00	

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	
Main Clg	15.5	186.1	178.8	11,647	75.3	62.7	65.6	61.5	57.5	64.7	7,284	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	1,776	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	
Totals	15.5	186.1										
											Roof	7,284 0 0
											Wall	2,973 1,350 45

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)--		
Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	1.4	Type	Clg	Htg	
(Mbh)	(cfm)	Deg F	Deg F	Vent	165	165	Clg Cfm/Sqft	1.60	SADB	61.5	77.3	
Main Htg	-128.6	11,647	67.4	77.3	Infil	238	297	Clg Cfm/Ton	751.14	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	11,647	11,647	Clg Sqft/Ton	469.75	Return	75.0	68.0
Preheat	-0.0	11,647	67.4	61.5	Mincfm	0	0	Clg Btuh/Sqft	25.55	Ret/OA	75.3	67.4
Reheat	0.0	0	0.0	0.0	Return	11,647	11,647	No. People	11	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	165	165	Htg % OA	1.4	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.60	Fn BldTD	0.0	0.0
Total	-128.6				Auxil	0	0	Htg Btuh/SqFt	-17.66	Fn Frict	0.0	0.0

System 2 Block UH - UNIT HEATER

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==> Mo/Hr: 0/ 0 * Mo/Hr: 0/ 0 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 0/ 0/ 0.0 * OADB: 0 * OADB: 23

	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Percent Of Tot (%)		Space Sensible (Btuh)	Percent Of Tot (%)		Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Percent Of Tot (%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	0	0		0	0.00	*	0	0.00	*	-6,346	-6,346	2.41
Glass Solar	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Glass Cond	0	0		0	0.00	*	0	0.00	*	-11,402	-11,402	4.34
Wall Cond	0	0		0	0.00	*	0	0.00	*	-23,792	-23,792	9.05
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	0			0	0.00	*	0	0.00	*	-8,800	-8,800	3.35
Sub Total==>	0	0		0	0.00	*	0	0.00	*	-50,341	-50,341	19.14
Internal Loads												
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	0	0.00	*	0	0.00	*	0	-212,678	80.86
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
Grand Total==>	0	0	0	0	0.00	*	0	0.00	*	-50,341	-263,019	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
				Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	3,842	
Main Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Part	0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Roof	3,842	0 0
Totals	0.0	0.0								Wall	1,763	225 13

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating	Clg % OA	0.0	Type	Clg	Htg
Main Htg	-263.0	4,260	23.0	78.7	Vent	0	4,260	Clg Cfm/Sqft	0.00	SAOB	0.0	78.7
Aux Htg	0.0	0	0.0	0.0	Infil	0	176	Clg Cfm/Ton	0.00	Plenum	0.0	68.0
Preheat	0.0	0	0.0	0.0	Supply	0	4,260	Clg Sqft/Ton	0.00	Return	0.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Sqft	0.00	Ret/OA	0.0	23.0
Humidif	0.0	0	0.0	0.0	Return	0	4,260	No. People	0	Runarnd	0.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	0	4,260	Htg % OA	100.0	Fn MtrTD	0.0	0.0
Total	-263.0				Rm Exh	0	0	Htg Cfm/SqFt	1.11	Fn BldTD	0.0	0.0
					Auxil	0	0	Htg Btuh/SqFt	-68.45	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-219,890	0.0	-253,031	0.2	-270,916	0.0	-270,918	0.0	-270,918	0.0
2	32.9	30.7	-220,017	0.0	-265,220	0.0	-276,756	0.0	-276,758	0.0	-276,758	0.0
3	33.1	31.3	-222,158	0.0	-269,964	0.0	-277,847	0.0	-277,848	0.0	-277,848	0.0
4	33.9	32.1	-224,457	0.0	-267,768	0.0	-273,155	0.0	-273,156	0.0	-273,156	0.0
5	35.2	33.5	-226,186	0.0	-263,146	0.0	-266,829	0.0	-266,830	0.0	-266,830	0.0
6	37.0	35.4	-222,591	0.0	-253,556	0.0	-256,073	0.0	-256,073	0.0	-256,073	0.0
7	39.0	37.6	-211,792	0.0	-242,776	0.0	-244,495	0.0	-244,496	0.0	-244,496	0.0
8	41.3	40.1	-198,933	0.0	-228,738	0.0	-229,914	0.0	-229,914	0.0	-229,914	0.0
9	43.7	42.5	-174,578	0.0	-210,043	0.0	-210,846	0.0	-210,846	0.0	-210,846	0.0
10	46.1	44.0	-140,780	0.0	-190,266	0.0	-190,815	0.0	-190,815	0.0	-190,815	0.0
11	48.4	45.0	-101,531	0.0	-167,317	0.0	-167,691	0.0	-167,692	0.0	-167,692	0.0
12	50.5	45.6	-75,106	0.0	-146,805	0.0	-147,061	0.0	-147,061	0.0	-147,061	0.0
13	52.2	46.1	-59,233	0.0	-129,749	0.0	-129,924	0.0	-129,924	0.0	-129,924	0.0
14	53.5	46.4	-47,549	0.0	-114,969	0.0	-115,088	0.0	-115,088	0.0	-115,088	0.0
15	54.3	46.3	-41,987	0.0	-104,430	0.0	-104,511	0.0	-104,511	0.0	-104,511	0.0
16	54.6	46.1	-42,861	4.6	-97,368	0.0	-97,424	0.0	-97,424	0.0	-97,424	0.0
17	54.0	45.9	-49,492	5.6	-98,809	0.0	-98,809	0.0	-98,809	0.0	-98,809	0.0
18	52.5	45.0	-63,406	3.4	-107,413	0.0	-107,445	0.0	-107,445	0.0	-107,445	0.0
19	50.1	44.8	-79,856	1.5	-127,312	0.0	-127,335	0.0	-127,335	0.0	-127,335	0.0
20	47.1	43.3	-96,655	0.0	-153,791	0.0	-153,807	0.0	-153,807	0.0	-153,807	0.0
21	43.7	40.4	-110,085	0.0	-182,154	0.0	-182,164	0.0	-182,164	0.0	-182,164	0.0
22	40.4	37.3	-122,869	0.0	-210,697	0.0	-210,704	0.0	-210,704	0.0	-210,704	0.0
23	37.3	34.9	-133,713	0.0	-236,078	0.0	-236,083	0.0	-236,083	0.0	-236,083	0.0
24	34.9	32.6	-141,612	0.0	-256,590	0.0	-256,594	0.0	-256,594	0.0	-256,594	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-168,289	0.0	-180,381	0.7	-206,549	0.0	-206,560	0.0	-206,560	0.0
2	39.7	37.1	-179,219	0.0	-208,328	0.0	-224,466	0.0	-224,473	0.0	-224,473	0.0
3	37.8	35.1	-189,073	0.0	-230,279	0.0	-241,303	0.0	-241,308	0.0	-241,308	0.0
4	36.3	33.8	-197,137	0.0	-246,967	0.0	-254,498	0.0	-254,502	0.0	-254,502	0.0
5	35.1	32.6	-202,011	0.0	-261,641	0.0	-266,788	0.0	-266,790	0.0	-266,790	0.0
6	34.4	32.0	-202,558	0.0	-269,516	0.0	-273,032	0.0	-273,033	0.0	-273,033	0.0
7	34.1	31.9	-198,140	0.0	-274,926	0.0	-277,328	0.0	-277,329	0.0	-277,329	0.0
8	34.6	32.4	-185,743	0.0	-273,250	0.0	-274,891	0.0	-274,892	0.0	-274,892	0.0
9	36.0	33.8	-161,839	0.0	-261,109	0.0	-262,230	0.0	-262,231	0.0	-262,231	0.0
10	38.2	34.7	-128,293	0.0	-240,299	0.0	-241,065	0.0	-241,065	0.0	-241,065	0.0
11	40.9	36.2	-92,569	0.0	-214,377	0.0	-214,899	0.0	-214,900	0.0	-214,900	0.0
12	43.9	37.4	-74,485	0.0	-187,019	0.0	-187,375	0.0	-187,375	0.0	-187,375	0.0
13	46.9	39.4	-59,707	0.0	-160,029	0.0	-160,271	0.0	-160,271	0.0	-160,271	0.0
14	49.7	41.4	-48,933	0.0	-134,655	0.0	-134,820	0.0	-134,821	0.0	-134,821	0.0
15	51.8	42.8	-43,186	3.2	-115,055	0.0	-115,168	0.0	-115,168	0.0	-115,168	0.0
16	53.2	43.9	-43,935	6.2	-104,506	0.0	-104,506	0.0	-104,506	0.0	-104,506	0.0
17	53.7	44.2	-49,236	6.6	-100,987	0.0	-100,987	0.0	-100,987	0.0	-100,987	0.0
18	53.4	44.4	-60,869	5.7	-102,025	0.0	-102,025	0.0	-102,025	0.0	-102,025	0.0
19	52.7	44.4	-77,055	3.0	-106,563	0.0	-106,563	0.0	-106,563	0.0	-106,563	0.0
20	51.5	45.2	-92,825	1.2	-113,659	0.0	-113,659	0.0	-113,659	0.0	-113,659	0.0
21	50.0	44.6	-106,247	0.0	-125,823	0.0	-125,871	0.0	-125,871	0.0	-125,871	0.0
22	48.1	43.3	-118,394	0.0	-146,018	0.0	-146,053	0.0	-146,053	0.0	-146,053	0.0
23	46.1	41.8	-128,284	0.0	-166,285	0.0	-166,309	0.0	-166,309	0.0	-166,309	0.0
24	43.9	40.1	-135,324	0.0	-186,257	0.0	-186,273	0.0	-186,273	0.0	-186,273	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-80,317	0.0	-108,741	0.0	-108,741	0.0	-108,741	0.0	-108,741	0.0
2	48.7	44.6	-90,262	0.0	-122,574	0.0	-122,574	0.0	-122,574	0.0	-122,574	0.0
3	46.6	42.9	-100,953	0.0	-133,764	0.0	-141,407	0.0	-141,407	0.0	-141,407	0.0
4	44.9	41.4	-110,594	0.0	-158,098	0.0	-163,971	0.0	-163,971	0.0	-163,971	0.0
5	43.9	40.8	-115,611	0.0	-174,187	0.0	-178,200	0.0	-178,200	0.0	-178,200	0.0
6	43.5	40.8	-115,275	0.0	-183,748	0.0	-186,490	0.0	-186,490	0.0	-186,490	0.0
7	44.0	41.4	-109,969	0.0	-185,195	0.0	-187,069	0.0	-187,069	0.0	-187,069	0.0
8	45.4	42.7	-91,503	0.0	-176,222	0.0	-177,502	0.0	-177,502	0.0	-177,502	0.0
9	47.7	44.3	-64,337	0.0	-156,389	0.0	-157,264	0.0	-157,264	0.0	-157,264	0.0
10	50.6	45.8	-42,463	0.0	-129,752	0.0	-130,349	0.0	-130,349	0.0	-130,349	0.0
11	53.9	47.4	-17,980	0.0	-97,364	0.0	-98,040	0.0	-98,040	0.0	-98,040	0.0
12	57.4	49.0	0	0.1	-77,368	0.0	-77,368	0.0	-77,368	0.0	-77,368	0.0
13	60.7	50.8	0	6.3	-59,724	0.0	-59,724	0.0	-59,724	0.0	-59,724	0.0
14	63.6	52.7	0	7.1	-42,802	0.0	-42,802	0.0	-42,802	0.0	-42,802	0.0
15	65.9	53.7	0	8.4	-30,225	0.0	-30,225	0.0	-30,225	0.0	-30,225	0.0
16	67.3	54.4	0	9.6	-21,184	0.5	-21,184	0.5	-21,184	0.5	-21,184	0.5
17	67.8	54.6	0	10.1	-17,894	3.8	-17,894	3.8	-17,894	3.8	-17,894	3.8
18	67.4	54.8	0	9.6	-19,874	3.6	-19,874	3.6	-19,874	3.6	-19,874	3.6
19	66.4	55.2	0	6.6	-26,175	2.2	-26,175	2.2	-26,175	2.2	-26,175	2.2
20	64.7	56.0	0	4.5	-36,266	1.0	-36,266	1.0	-36,266	1.0	-36,266	1.0
21	62.5	56.0	0	2.9	-48,392	0.3	-48,392	0.3	-48,392	0.3	-48,392	0.3
22	60.0	54.1	-47,627	1.6	-61,749	0.0	-61,749	0.0	-61,749	0.0	-61,749	0.0
23	57.1	51.9	-62,804	0.4	-77,203	0.0	-77,203	0.0	-77,203	0.0	-77,203	0.0
24	54.2	49.4	-71,547	0.0	-92,752	0.0	-92,752	0.0	-92,752	0.0	-92,752	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	-23,194	0.0	0	0.0	-52,737	0.0	-52,737	0.0	-52,737	0.0
2	58.9	54.9	-30,700	0.0	-50,862	0.0	-64,086	0.0	-64,086	0.0	-64,086	0.0
3	57.0	53.5	-37,272	0.0	-74,514	0.0	-74,514	0.0	-74,514	0.0	-74,514	0.0
4	55.4	52.4	-41,545	0.0	-84,115	0.0	-84,115	0.0	-84,115	0.0	-84,115	0.0
5	54.2	51.4	-44,292	0.0	-91,070	0.0	-91,070	0.0	-91,070	0.0	-91,070	0.0
6	53.5	50.9	-42,918	0.0	-95,528	0.0	-95,528	0.0	-95,528	0.0	-95,528	0.0
7	53.2	51.1	-37,204	0.0	-97,379	0.0	-97,379	0.0	-97,379	0.0	-97,379	0.0
8	53.9	51.5	-24,233	0.0	-93,747	0.0	-93,747	0.0	-93,747	0.0	-93,747	0.0
9	55.9	52.1	-7,039	1.5	-82,785	0.0	-82,785	0.0	-82,785	0.0	-82,785	0.0
10	58.9	53.2	0	5.7	-64,717	0.0	-64,717	0.0	-64,717	0.0	-64,717	0.0
11	62.6	55.2	0	7.1	-43,967	0.0	-43,967	0.0	-43,967	0.0	-43,967	0.0
12	66.5	57.3	0	7.8	-22,895	0.0	-22,895	0.0	-22,895	0.0	-22,895	0.0
13	70.2	59.6	0	8.1	-2,366	0.3	-2,366	0.3	-2,366	0.3	-2,366	0.3
14	73.2	61.0	0	9.2	0	4.5	0	4.5	0	4.5	0	4.5
15	75.2	62.2	0	10.4	0	5.6	0	5.6	0	5.6	0	5.6
16	75.9	62.2	0	11.3	0	5.8	0	5.8	0	5.8	0	5.8
17	75.6	62.0	0	11.8	0	6.3	0	6.3	0	6.3	0	6.3
18	74.9	61.7	0	11.5	0	6.1	0	6.1	0	6.1	0	6.1
19	73.7	62.0	0	9.2	0	5.0	0	5.0	0	5.0	0	5.0
20	72.1	62.4	0	6.8	0	3.4	0	3.4	0	3.4	0	3.4
21	70.2	63.3	0	5.1	0	2.5	0	2.5	0	2.5	0	2.5
22	68.0	62.5	0	3.8	0	1.5	0	1.6	0	1.6	0	1.6
23	65.7	60.5	0	2.7	0	0.7	0	0.7	0	0.7	0	0.7
24	63.4	58.5	0	1.8	-39,779	0.0	-39,779	0.0	-39,779	0.0	-39,779	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
 MULTI-ZONE SYSTEMS

May	----- Design -----						----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		2.6		0		1.0		0		1.1		0		1.1		0		1.1
2	65.7	61.5		0		1.9		0		0.2		0		0.2		0		0.2		0		0.2
3	63.6	59.7		0		1.3		0		0.0		0		0.0		0		0.0		0		0.0
4	61.8	58.4		0		1.0		0		0.0		-30,121		0.0		-30,121		0.0		-30,121		0.0
5	60.5	57.1		0		0.5		0		0.0		-53,444		0.0		-53,444		0.0		-53,444		0.0
6	59.7	56.5		0		0.3		-51,401		0.0		-59,173		0.0		-59,173		0.0		-59,173		0.0
7	59.4	56.5		0		1.9		-60,072		0.0		-60,072		0.0		-60,072		0.0		-60,072		0.0
8	60.1	56.3		0		3.9		-55,890		0.0		-55,890		0.0		-55,890		0.0		-55,890		0.0
9	62.4	56.3		0		5.9		-42,638		0.0		-42,638		0.0		-42,638		0.0		-42,638		0.0
10	65.7	57.2		0		7.7		-23,396		0.0		-23,396		0.0		-23,396		0.0		-23,396		0.0
11	69.9	58.9		0		9.0		0		4.1		0		4.3		0		4.3		0		4.3
12	74.3	60.9		0		9.6		0		4.5		0		4.7		0		4.7		0		4.7
13	78.5	63.7		0		9.8		0		5.2		0		5.3		0		5.3		0		5.3
14	81.9	65.3		0		10.9		0		6.2		0		6.3		0		6.3		0		6.3
15	84.1	66.9		0		12.1		0		7.4		0		7.5		0		7.5		0		7.5
16	84.9	67.1		0		13.0		0		8.0		0		8.0		0		8.0		0		8.0
17	84.6	67.3		0		13.5		0		8.4		0		8.4		0		8.4		0		8.4
18	83.8	67.1		0		13.3		0		8.3		0		8.3		0		8.3		0		8.3
19	82.4	67.5		0		11.6		0		7.4		0		7.4		0		7.4		0		7.4
20	80.6	68.9		0		9.0		0		5.6		0		5.6		0		5.6		0		5.6
21	78.5	71.0		0		7.2		0		4.7		0		4.7		0		4.7		0		4.7
22	76.1	69.9		0		5.8		0		3.6		0		3.6		0		3.6		0		3.6
23	73.4	68.0		0		4.4		0		2.7		0		2.7		0		2.7		0		2.7
24	70.8	65.5		0		3.4		0		1.9		0		1.9		0		1.9		0		1.9

June	----- Design -----						----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		5.2		0		2.6		0		2.8		0		2.8		0		2.8
2	72.6	68.4		0		4.3		0		2.0		0		2.1		0		2.1		0		2.1
3	70.9	67.3		0		3.6		0		1.1		0		1.2		0		1.2		0		1.2
4	69.6	66.5		0		3.0		0		0.9		0		0.9		0		0.9		0		0.9
5	68.7	65.8		0		2.8		0		0.3		0		0.3		0		0.3		0		0.3
6	68.5	65.7		0		2.4		0		0.0		0		0.0		0		0.0		0		0.0
7	69.0	66.3		0		4.1		0		0.8		0		0.9		0		0.9		0		0.9
8	70.6	66.9		0		6.6		0		2.5		0		2.5		0		2.5		0		2.5
9	73.0	67.7		0		8.6		0		4.0		0		4.0		0		4.0		0		4.0
10	76.1	68.1		0		10.1		0		5.7		0		5.7		0		5.7		0		5.7
11	79.5	69.1		0		11.3		0		6.6		0		6.6		0		6.6		0		6.6
12	82.9	70.1		0		11.6		0		7.3		0		7.3		0		7.3		0		7.3
13	86.0	71.0		0		12.0		0		7.7		0		7.7		0		7.7		0		7.7
14	88.4	72.5		0		12.7		0		8.7		0		8.7		0		8.7		0		8.7
15	90.0	74.0		0		13.8		0		10.1		0		10.1		0		10.1		0		10.1
16	90.5	73.7		0		14.7		0		10.2		0		10.2		0		10.2		0		10.2
17	90.3	74.2		0		15.3		0		10.6		0		10.6		0		10.6		0		10.6
18	89.4	73.9		0		15.2		0		10.4		0		10.4		0		10.4		0		10.4
19	88.1	74.5		0		13.8		0		9.6		0		9.6		0		9.6		0		9.6
20	86.4	75.3		0		11.3		0		7.6		0		7.6		0		7.6		0		7.6
21	84.3	76.5		0		9.5		0		6.5		0		6.5		0		6.5		0		6.5
22	81.9	75.7		0		7.8		0		5.4		0		5.4		0		5.4		0		5.4
23	79.5	74.0		0		6.6		0		4.5		0		4.5		0		4.5		0		4.5
24	77.0	72.1		0		5.6		0		3.6		0		3.6		0		3.6		0		3.6

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	5.1	0	1.9	0	2.1	0	2.1	0	2.1
2	72.4	69.4	0	4.2	0	1.6	0	1.7	0	1.7	0	1.7
3	71.3	68.4	0	3.8	0	1.0	0	1.1	0	1.1	0	1.1
4	70.5	67.7	0	3.2	0	0.5	0	0.5	0	0.5	0	0.5
5	70.0	67.4	0	3.0	0	0.3	0	0.3	0	0.3	0	0.3
6	69.9	67.5	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	4.0	0	0.6	0	0.6	0	0.6	0	0.6
8	71.7	69.0	0	6.5	0	2.5	0	2.5	0	2.5	0	2.5
9	73.7	69.5	0	8.2	0	4.1	0	4.2	0	4.2	0	4.2
10	76.2	70.6	0	9.8	0	6.0	0	6.0	0	6.0	0	6.0
11	78.9	71.8	0	11.0	0	6.9	0	6.9	0	6.9	0	6.9
12	81.4	73.0	0	11.4	0	7.3	0	7.3	0	7.3	0	7.3
13	83.4	74.4	0	11.6	0	7.6	0	7.6	0	7.6	0	7.6
14	84.8	74.8	0	12.3	0	8.3	0	8.3	0	8.3	0	8.3
15	85.2	75.0	0	13.4	0	9.4	0	9.4	0	9.4	0	9.4
16	85.1	75.0	0	14.3	0	9.3	0	9.3	0	9.3	0	9.3
17	84.6	74.7	0	14.9	0	9.5	0	9.5	0	9.5	0	9.5
18	83.8	74.6	0	14.8	0	9.5	0	9.5	0	9.5	0	9.5
19	82.7	74.6	0	13.5	0	8.3	0	8.3	0	8.3	0	8.3
20	81.4	74.4	0	10.8	0	6.7	0	6.7	0	6.7	0	6.7
21	79.9	74.9	0	9.0	0	5.4	0	5.4	0	5.4	0	5.4
22	78.4	74.0	0	7.5	0	4.6	0	4.6	0	4.6	0	4.6
23	76.8	72.7	0	6.6	0	3.6	0	3.6	0	3.6	0	3.6
24	75.2	71.6	0	5.7	0	2.8	0	2.8	0	2.8	0	2.8

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	5.1	0	2.3	0	2.5	0	2.5	0	2.5
2	73.2	70.3	0	4.1	0	1.7	0	1.8	0	1.8	0	1.8
3	71.7	68.9	0	3.7	0	1.4	0	1.5	0	1.5	0	1.5
4	70.4	67.8	0	3.1	0	0.9	0	0.9	0	0.9	0	0.9
5	69.5	66.8	0	2.5	0	0.3	0	0.3	0	0.3	0	0.3
6	68.9	66.4	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	3.1	0	0.1	0	0.1	0	0.1	0	0.1
8	69.2	66.8	0	5.5	0	1.9	0	1.9	0	1.9	0	1.9
9	70.8	67.7	0	7.8	0	3.3	0	3.3	0	3.3	0	3.3
10	73.2	67.7	0	9.5	0	5.2	0	5.3	0	5.3	0	5.3
11	76.2	68.8	0	10.9	0	6.2	0	6.2	0	6.2	0	6.2
12	79.3	70.3	0	11.4	0	6.7	0	6.7	0	6.7	0	6.7
13	82.3	72.2	0	11.9	0	7.4	0	7.4	0	7.4	0	7.4
14	84.7	73.7	0	12.7	0	8.2	0	8.2	0	8.2	0	8.2
15	86.3	74.6	0	13.7	0	9.4	0	9.4	0	9.4	0	9.4
16	86.8	75.1	0	14.8	0	9.9	0	9.9	0	9.9	0	9.9
17	86.6	75.1	0	15.2	0	10.0	0	10.0	0	10.0	0	10.0
18	86.0	75.3	0	14.9	0	10.1	0	10.1	0	10.1	0	10.1
19	85.1	76.0	0	12.7	0	8.8	0	8.8	0	8.8	0	8.8
20	83.8	76.8	0	10.6	0	7.0	0	7.0	0	7.0	0	7.0
21	82.3	77.2	0	8.9	0	6.0	0	6.0	0	6.0	0	6.0
22	80.6	76.3	0	7.6	0	5.0	0	5.0	0	5.0	0	5.0
23	78.7	75.3	0	6.4	0	4.1	0	4.1	0	4.1	0	4.1
24	76.8	73.7	0	5.5	0	3.2	0	3.2	0	3.2	0	3.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
 MULTI-ZONE SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	3.4	0	0.9	0	1.1	0	1.1	0	1.1
2	67.6	65.0	0	2.6	0	0.3	0	0.4	0	0.4	0	0.4
3	65.8	63.4	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	1.3	0	0.0	-8,782	0.0	-8,782	0.0	-8,782	0.0
5	63.1	61.1	0	1.1	0	0.0	-41,261	0.0	-41,261	0.0	-41,261	0.0
6	62.4	60.3	0	0.7	-29,992	0.0	-45,712	0.0	-45,712	0.0	-45,712	0.0
7	62.2	60.2	0	0.6	-48,390	0.0	-48,390	0.0	-48,390	0.0	-48,390	0.0
8	62.9	60.9	0	3.3	-43,735	0.0	-43,735	0.0	-43,735	0.0	-43,735	0.0
9	64.7	61.8	0	5.6	-34,219	0.0	-34,219	0.0	-34,219	0.0	-34,219	0.0
10	67.6	62.1	0	7.8	-17,514	0.0	-17,514	0.0	-17,514	0.0	-17,514	0.0
11	71.1	63.1	0	9.0	0	4.2	0	4.3	0	4.3	0	4.3
12	74.8	64.6	0	9.7	0	5.4	0	5.5	0	5.5	0	5.5
13	78.3	66.7	0	10.3	0	6.1	0	6.1	0	6.1	0	6.1
14	81.2	68.4	0	11.3	0	7.2	0	7.2	0	7.2	0	7.2
15	83.0	70.0	0	12.7	0	8.0	0	8.0	0	8.0	0	8.0
16	83.7	70.5	0	13.8	0	8.7	0	8.7	0	8.7	0	8.7
17	83.4	70.5	0	14.0	0	8.8	0	8.8	0	8.8	0	8.8
18	82.8	70.9	0	12.9	0	8.1	0	8.1	0	8.1	0	8.1
19	81.6	72.7	0	10.2	0	6.4	0	6.4	0	6.4	0	6.4
20	80.1	74.7	0	8.4	0	5.4	0	5.4	0	5.4	0	5.4
21	78.3	74.1	0	7.0	0	4.4	0	4.4	0	4.4	0	4.4
22	76.3	72.4	0	5.7	0	3.4	0	3.4	0	3.4	0	3.4
23	74.1	70.7	0	4.7	0	2.5	0	2.5	0	2.5	0	2.5
24	71.8	68.9	0	3.8	0	1.8	0	1.8	0	1.8	0	1.8

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-102,504	0.0	-102,504	0.0	-102,504	0.0	-102,504	0.0
2	50.1	48.6	-31,835	0.0	-113,880	0.0	-113,880	0.0	-113,880	0.0	-113,880	0.0
3	48.4	46.9	-80,653	0.0	-123,824	0.0	-123,824	0.0	-123,824	0.0	-123,824	0.0
4	47.1	45.8	-85,170	0.0	-135,980	0.0	-142,724	0.0	-142,724	0.0	-142,724	0.0
5	46.3	44.8	-88,588	0.0	-151,579	0.0	-156,294	0.0	-156,294	0.0	-156,294	0.0
6	46.0	44.5	-87,142	0.0	-161,357	0.0	-164,581	0.0	-164,581	0.0	-164,581	0.0
7	46.8	45.3	-80,978	0.0	-161,037	0.0	-163,241	0.0	-163,241	0.0	-163,241	0.0
8	48.9	47.5	-69,019	0.0	-147,836	0.0	-149,343	0.0	-149,343	0.0	-149,343	0.0
9	52.2	49.9	-49,922	0.0	-121,356	0.0	-122,386	0.0	-122,386	0.0	-122,386	0.0
10	56.2	52.5	-28,382	0.0	-87,306	0.0	-87,306	0.0	-87,306	0.0	-87,306	0.0
11	60.4	54.4	-4,259	0.0	-63,597	0.0	-63,597	0.0	-63,597	0.0	-63,597	0.0
12	64.4	56.0	0	4.4	-42,004	0.0	-42,004	0.0	-42,004	0.0	-42,004	0.0
13	67.7	57.3	0	6.5	-23,379	0.0	-23,379	0.0	-23,379	0.0	-23,379	0.0
14	69.8	58.2	0	7.7	-10,404	0.0	-10,404	0.0	-10,404	0.0	-10,404	0.0
15	70.6	58.1	0	9.0	-4,566	0.0	-4,566	0.0	-4,566	0.0	-4,566	0.0
16	70.3	57.5	0	10.1	-4,657	4.2	-4,657	4.1	-4,657	4.1	-4,657	4.1
17	69.5	57.3	0	9.9	-8,019	4.6	-8,019	4.6	-8,019	4.6	-8,019	4.6
18	68.2	57.7	0	7.5	-15,454	3.2	-15,454	3.2	-15,454	3.2	-15,454	3.2
19	66.5	60.6	0	5.5	-24,787	1.9	-24,787	1.9	-24,787	1.9	-24,787	1.9
20	64.4	60.8	0	3.9	-36,521	1.1	-36,521	1.1	-36,521	1.1	-36,521	1.1
21	62.1	59.4	0	2.4	-49,519	0.2	-49,519	0.2	-49,519	0.2	-49,519	0.2
22	59.6	57.3	0	1.3	-63,091	0.0	-63,091	0.0	-63,091	0.0	-63,091	0.0
23	57.0	55.1	-47,757	0.5	-76,895	0.0	-76,895	0.0	-76,895	0.0	-76,895	0.0
24	54.5	52.7	-58,484	0.0	-90,152	0.0	-90,152	0.0	-90,152	0.0	-90,152	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

November		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0 49.2	-85,049	0.0	-105,243	0.0	-105,243	0.0	-105,243	0.0	-105,243	0.0
2	49.4 47.3	-92,689	0.0	-119,015	0.0	-119,015	0.0	-119,015	0.0	-119,015	0.0
3	47.2 45.3	-99,309	0.0	-130,799	0.0	-139,291	0.0	-139,291	0.0	-139,291	0.0
4	45.3 43.4	-105,182	0.0	-157,174	0.0	-162,746	0.0	-162,746	0.0	-162,746	0.0
5	43.9 42.2	-107,669	0.0	-175,667	0.0	-179,477	0.0	-179,477	0.0	-179,477	0.0
6	43.0 41.4	-112,835	0.0	-188,177	0.0	-190,784	0.0	-190,784	0.0	-190,784	0.0
7	42.7 41.2	-109,274	0.0	-194,724	0.0	-196,506	0.0	-196,506	0.0	-196,506	0.0
8	43.5 42.0	-95,631	0.0	-191,993	0.0	-193,212	0.0	-193,212	0.0	-193,212	0.0
9	45.9 44.0	-67,666	0.0	-173,703	0.0	-174,536	0.0	-174,536	0.0	-174,536	0.0
10	49.4 46.6	-44,992	0.0	-143,430	0.0	-143,999	0.0	-143,999	0.0	-143,999	0.0
11	53.8 48.6	-19,362	0.0	-106,012	0.0	-106,401	0.0	-106,401	0.0	-106,401	0.0
12	58.4 50.6	0	0.0	-76,646	0.0	-76,646	0.0	-76,646	0.0	-76,646	0.0
13	62.8 52.6	0	0.2	-52,912	0.0	-52,912	0.0	-52,912	0.0	-52,912	0.0
14	66.3 54.5	0	6.7	-33,909	0.0	-33,909	0.0	-33,909	0.0	-33,909	0.0
15	68.7 55.7	0	8.0	-19,668	0.0	-19,668	0.0	-19,668	0.0	-19,668	0.0
16	69.5 56.1	0	8.8	-14,296	0.0	-14,296	0.0	-14,296	0.0	-14,296	0.0
17	69.2 55.8	0	8.2	-14,572	0.0	-14,572	0.0	-14,572	0.0	-14,572	0.0
18	68.3 57.0	0	6.0	-19,784	1.6	-19,784	1.6	-19,784	1.6	-19,784	1.6
19	66.9 59.4	0	4.2	-27,906	1.2	-27,906	1.2	-27,906	1.2	-27,906	1.2
20	65.0 59.4	0	2.6	-37,348	0.3	-37,348	0.3	-37,348	0.3	-37,348	0.3
21	62.8 58.2	-6,531	1.5	-49,365	0.0	-49,365	0.0	-49,365	0.0	-49,365	0.0
22	60.2 56.1	-54,585	0.5	-62,474	0.0	-62,474	0.0	-62,474	0.0	-62,474	0.0
23	57.5 54.0	-67,106	0.0	-76,594	0.0	-76,594	0.0	-76,594	0.0	-76,594	0.0
24	54.7 51.7	-76,464	0.0	-91,308	0.0	-91,308	0.0	-91,308	0.0	-91,308	0.0

December		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9 42.5	-109,121	0.0	-147,006	0.0	-178,205	0.0	-178,251	0.0	-178,251	0.0
2	43.2 41.1	-115,266	0.0	-173,444	0.0	-194,436	0.0	-194,466	0.0	-194,466	0.0
3	41.8 39.8	-122,247	0.0	-193,289	0.0	-207,635	0.0	-207,656	0.0	-207,656	0.0
4	40.7 38.7	-136,904	0.0	-208,586	0.0	-218,392	0.0	-218,406	0.0	-218,406	0.0
5	40.1 38.4	-146,695	0.0	-218,209	0.0	-224,912	0.0	-224,922	0.0	-224,922	0.0
6	39.9 38.4	-148,937	0.0	-223,995	0.0	-228,577	0.0	-228,584	0.0	-228,584	0.0
7	40.5 39.0	-145,985	0.0	-222,738	0.0	-225,870	0.0	-225,875	0.0	-225,875	0.0
8	42.2 40.7	-136,528	0.0	-213,419	0.0	-215,560	0.0	-215,563	0.0	-215,563	0.0
9	44.9 43.4	-114,263	0.0	-193,112	0.0	-194,575	0.0	-194,577	0.0	-194,577	0.0
10	48.2 45.8	-85,032	0.0	-164,805	0.0	-165,804	0.0	-165,806	0.0	-165,806	0.0
11	51.7 48.3	-59,477	0.0	-133,855	0.0	-134,538	0.0	-134,539	0.0	-134,539	0.0
12	55.0 50.7	-41,239	0.0	-104,483	0.0	-104,949	0.0	-104,949	0.0	-104,949	0.0
13	57.7 52.0	-26,546	0.0	-82,304	0.0	-82,304	0.0	-82,304	0.0	-82,304	0.0
14	59.5 52.6	-15,333	0.0	-71,725	0.0	-71,725	0.0	-71,725	0.0	-71,725	0.0
15	60.1 52.7	-9,897	3.3	-67,109	0.0	-67,109	0.0	-67,109	0.0	-67,109	0.0
16	59.9 52.6	-11,076	6.5	-66,375	0.0	-66,375	0.0	-66,375	0.0	-66,375	0.0
17	59.2 52.1	-17,874	6.0	-69,472	0.0	-69,472	0.0	-69,472	0.0	-69,472	0.0
18	58.2 51.8	-30,688	3.9	-74,995	0.0	-74,995	0.0	-74,995	0.0	-74,995	0.0
19	56.8 52.2	-45,890	2.3	-82,965	0.0	-82,965	0.0	-82,965	0.0	-82,965	0.0
20	55.0 51.4	-61,279	1.0	-92,745	0.0	-92,745	0.0	-92,745	0.0	-92,745	0.0
21	53.1 50.1	-74,596	0.0	-102,568	0.0	-102,568	0.0	-102,568	0.0	-102,568	0.0
22	51.0 48.1	-86,181	0.0	-115,710	0.0	-115,882	0.0	-115,882	0.0	-115,882	0.0
23	48.9 46.2	-95,575	0.0	-138,583	0.0	-138,680	0.0	-138,680	0.0	-138,680	0.0
24	46.9 44.1	-102,936	0.0	-158,224	0.0	-158,290	0.0	-158,290	0.0	-158,290	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29709 (1 BUILDING) (TYPE 5C)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	DINNING FACILITY

-----CARD 20-- General Room Parameters -----

Room	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
1	1	DINNING ROOM	7284		2	0		12			

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	KITCHEN	3842.25		2	0		12			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50					HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				4			
2	1	YES				4			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	86.25	11		196	180			
1	2	92	11		196	270			
1	3	92	11		196	90			
2	1	37	11		196	270			
2	2	86.25	11		196	0			
2	3	37	11		196	90			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	20.25	10	1	1.03	.94					
1	2	3.75	1.5	102	1.03	.94					
1	3	3.75	1.5	102	1.03	.94					
2	1	3.75	1.5	9	1.03	.94					
2	2	3.75	1.5	22	1.03	.94					
2	3	3.75	1.5	9	1.03	.94					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						
2	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	11	PEOPLE	255	325	1.8	WATT-SF	ASHRAE2				
2	284	PEOPLE	255	325	1.5	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
2	1	MISS.	29	KW	FGHEAT						
2	2	MISS.GAS	280	MBH	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1	1	CFM-SF	1	CFM-SF						
2	1	CFM-SF	1	CFM-SF						

-----CARD 31-- Partition Parameters -----

Room Number	Partition Number	Partition Length	Partition Height	Partition U-Value	Const Type	Temp Flag	Cooling Temp	Heating Temp	Adjacent Room No
1	1	148	12	.61					2

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	MULTI-ZONE SYSTEMS

-----CARD 40--- System Type -----
-----OPTIONAL VENTILATION SYSTEM-----

System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	MZ						
2	UH						

-----CARD 41-- Zone Assignment -----

[illegible]

-----CARD 42--- Fan SP and Duct Parameters-----

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

FGHEAT SCHD FOR HEAT LOAD CALCS

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

YES AVAILABLE (100%)

System:

MZ MULTIZONE

UH UNIT HEATERS

Schedule Name: CLGCONST

Project: SAMPLE HEATING TSTAT SCHEDULE

Location: SAMPLE

Client:

Program User:

Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

----	-----
0	75
24	

Schedule Name: FCHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		0
24		

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		0
24		

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGH Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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**          T R A C E    6 0 0    A N A L Y S I S          **  
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**          by          **  
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29603 (2 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 13:47:57 8/15/94
Dataset Name: FGTYPS6 .TM

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***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==)           Mo/Hr: 8/16           *           Mo/Hr: 6/17           *           Mo/Hr: 13/ 1
Outside Air ==)           OADB/WB/HR: 96/ 76/105.0   *           OADB: 98           *           OADB: 23
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	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Percent Of Tot (%)	Space Sensible (Btuh)	Percent Of Tot (%)	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Percent Of Tot (%)
Envelope Loads										
Skylite Solr	0	0		0	0.00	0	0.00	0	0	0.00
Skylite Cond	0	0		0	0.00	0	0.00	0	0	0.00
Roof Cond	51,294	0		51,294	15.11	57,969	21.26	-31,619	-31,619	9.46
Glass Solar	99,690	0		99,690	29.36	92,213	33.82	0	0	0.00
Glass Cond	50,057	0		50,057	14.74	56,731	20.80	-126,297	-126,297	37.79
Wall Cond	45,585	0		45,585	13.42	50,265	18.43	-77,998	-77,998	23.34
Partition	0			0	0.00	0	0.00	0	0	0.00
Exposed Floor	0			0	0.00	0	0.00	0	0	0.00
Infiltration	30,817			30,817	9.08	15,512	5.69	-37,610	-37,610	11.25
Sub Total==>	277,443	0		277,443	81.70	272,690	100.00	-273,524	-273,524	81.85
Internal Loads										
Lights	0	0		0	0.00	0	0.00	0	0	0.00
People	0			0	0.00	0	0.00	0	0	0.00
Misc	0	0	0	0	0.00	0	0.00	0	0	0.00
Sub Total==>	0	0	0	0	0.00	0	0.00	0	0	0.00
Ceiling Load	0	0		0	0.00	0	0.00	0	0	0.00
Outside Air	0	0	0	62,128	18.30	0	0.00	0	-60,658	18.15
Sup. Fan Heat				0	0.00		0.00		0	0.00
Ret. Fan Heat		0		0	0.00		0.00		0	0.00
Duct Heat Pkup		0		0	0.00		0.00		0	0.00
OV/UNDR Sizing	0			0	0.00	0	0.00	0	0	0.00
Exhaust Heat		0	0	0	0.00		0.00		0	0.00
Terminal Bypass		0	0	0	-0.00		0.00		0	0.00
Grand Total==>	277,443	0	0	339,571	100.00	272,690	100.00	-273,524	-334,182	100.00

-COOLING COIL SELECTION-

COOLING COIL SELECTION													
	Total Capacity		Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor		
Main Clg	28.3	339.6	289.2	15,795	76.6	63.7	68.3	59.4	56.7	64.9	Part	0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	3,291	0 0
Totals	28.3	339.6									Wall	7,533	2,492 33

--AREAS

-HEATING COIL SELECTION

	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F
Main Htg	-334.2	15,795	64.5	83.6
Aux Htg	0.0	0	0.0	0.0
Preheat	-0.0	15,795	64.5	59.4
Reheat	0.0	0	0.0	0.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-334.2			

-----AIRFLOWS (cfm)-----

Type	Cooling	Heating
Vent	1,215	1,215
Infil	602	753
Supply	15,795	15,795
Mincfm	0	0
Return	15,795	15,795
Exhaust	1,215	1,215
Rm Exh	0	0
Auxil	0	0

--ENGINEERING CHECKS--

Clg % OA	7.7
Clg Cfm/Sqft	1.60
Clg Cfm/Ton	558.17
Clg Sqft/Ton	348.85
Clg Btuh/Sqft	34.40
No. People	81
Htg % OA	7.7
Htg Cfm/Sqft	1.60
Htg Btuh/Sqft	-33.85

--TEMPERATURES (F)---

Type	Clg	Htg
SADB	59.4	83.6
Plenum	75.0	68.0
Return	75.0	68.0
Ret/OA	76.6	64.5
Runarnd	75.0	68.0
Fn MtrTD	0.0	0.0
Fn BldTD	0.0	0.0
Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-282,423	0.0	-198,708	0.0	-198,708	0.0	-198,708	0.0	-198,708	0.0
2	32.9	30.7	-207,241	0.0	-206,329	0.0	-206,329	0.0	-206,329	0.0	-206,329	0.0
3	33.1	31.3	-159,101	0.0	-214,192	0.0	-214,192	0.0	-214,192	0.0	-214,192	0.0
4	33.9	32.1	-168,578	0.0	-213,977	0.0	-213,977	0.0	-213,977	0.0	-213,977	0.0
5	35.2	33.5	-176,952	0.0	-214,881	0.0	-214,881	0.0	-214,881	0.0	-214,881	0.0
6	37.0	35.4	-182,510	0.0	-213,783	0.0	-213,783	0.0	-213,783	0.0	-213,783	0.0
7	39.0	37.6	-182,157	0.0	-211,131	0.0	-211,131	0.0	-211,131	0.0	-211,131	0.0
8	41.3	40.1	-179,812	0.0	-203,768	0.0	-203,768	0.0	-203,768	0.0	-203,768	0.0
9	43.7	42.5	-145,065	0.0	-180,273	0.0	-180,273	0.0	-180,273	0.0	-180,273	0.0
10	46.1	44.0	-99,756	0.0	-159,829	0.0	-159,829	0.0	-159,829	0.0	-159,829	0.0
11	48.4	45.0	-56,876	0.0	-133,858	0.0	-133,858	0.0	-133,858	0.0	-133,858	0.0
12	50.5	45.6	-14,768	0.0	-112,717	0.0	-112,717	0.0	-112,717	0.0	-112,717	0.0
13	52.2	46.1	0	0.0	-91,322	0.0	-91,322	0.0	-91,322	0.0	-91,322	0.0
14	53.5	46.4	0	0.0	-71,101	0.0	-71,101	0.0	-71,101	0.0	-71,101	0.0
15	54.3	46.3	0	0.0	-57,518	0.0	-57,518	0.0	-57,518	0.0	-57,518	0.0
16	54.6	46.1	0	1.1	-47,816	0.0	-47,816	0.0	-47,816	0.0	-47,816	0.0
17	54.0	45.9	0	4.8	-46,826	0.0	-46,826	0.0	-46,826	0.0	-46,826	0.0
18	52.5	45.0	0	1.7	-59,126	0.0	-59,126	0.0	-59,126	0.0	-59,126	0.0
19	50.1	44.8	-15,665	0.0	-79,695	0.0	-79,695	0.0	-79,695	0.0	-79,695	0.0
20	47.1	43.3	-1,938	0.0	-99,608	0.0	-99,608	0.0	-99,608	0.0	-99,608	0.0
21	43.7	40.4	0	0.0	-122,380	0.0	-122,380	0.0	-122,380	0.0	-122,380	0.0
22	40.4	37.3	-12,457	0.0	-145,059	0.0	-145,059	0.0	-145,059	0.0	-145,059	0.0
23	37.3	34.9	-98,531	0.0	-163,896	0.0	-163,896	0.0	-163,896	0.0	-163,896	0.0
24	34.9	32.6	-118,312	0.0	-182,607	0.0	-182,607	0.0	-182,607	0.0	-182,607	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-121,554	0.0	-157,193	0.0	-157,193	0.0	-157,193	0.0	-157,193	0.0
2	39.7	37.1	-138,567	0.0	-168,160	0.0	-168,160	0.0	-168,160	0.0	-168,160	0.0
3	37.8	35.1	-150,091	0.0	-184,067	0.0	-184,067	0.0	-184,067	0.0	-184,067	0.0
4	36.3	33.8	-159,860	0.0	-192,604	0.0	-192,604	0.0	-192,604	0.0	-192,604	0.0
5	35.1	32.6	-167,553	0.0	-207,243	0.0	-207,243	0.0	-207,243	0.0	-207,243	0.0
6	34.4	32.0	-174,227	0.0	-214,099	0.0	-214,099	0.0	-214,099	0.0	-214,099	0.0
7	34.1	31.9	-174,253	0.0	-217,058	0.0	-217,058	0.0	-217,058	0.0	-217,058	0.0
8	34.6	32.4	-166,676	0.0	-218,610	0.0	-218,610	0.0	-218,610	0.0	-218,610	0.0
9	36.0	33.8	-130,137	0.0	-201,149	0.0	-201,149	0.0	-201,149	0.0	-201,149	0.0
10	38.2	34.7	-87,286	0.0	-184,652	0.0	-184,652	0.0	-184,652	0.0	-184,652	0.0
11	40.9	36.2	-46,004	0.0	-162,580	0.0	-162,580	0.0	-162,580	0.0	-162,580	0.0
12	43.9	37.4	-9,760	0.0	-137,982	0.0	-137,982	0.0	-137,982	0.0	-137,982	0.0
13	46.9	39.4	0	0.0	-109,639	0.0	-109,639	0.0	-109,639	0.0	-109,639	0.0
14	49.7	41.4	0	0.0	-87,105	0.0	-87,105	0.0	-87,105	0.0	-87,105	0.0
15	51.8	42.8	0	0.0	-65,934	0.0	-65,934	0.0	-65,934	0.0	-65,934	0.0
16	53.2	43.9	0	1.6	-53,713	0.0	-53,713	0.0	-53,713	0.0	-53,713	0.0
17	53.7	44.2	0	5.4	-49,787	0.0	-49,787	0.0	-49,787	0.0	-49,787	0.0
18	53.4	44.4	0	3.5	-52,868	0.0	-52,868	0.0	-52,868	0.0	-52,868	0.0
19	52.7	44.4	0	0.4	-71,237	0.0	-71,237	0.0	-71,237	0.0	-71,237	0.0
20	51.5	45.2	0	0.0	-85,524	0.0	-85,524	0.0	-85,524	0.0	-85,524	0.0
21	50.0	44.6	0	0.0	-97,885	0.0	-97,885	0.0	-97,885	0.0	-97,885	0.0
22	48.1	43.3	0	0.0	-113,467	0.0	-113,467	0.0	-113,467	0.0	-113,467	0.0
23	46.1	41.8	-70,940	0.0	-127,038	0.0	-127,038	0.0	-127,038	0.0	-127,038	0.0
24	43.9	40.1	-107,212	0.0	-144,147	0.0	-144,147	0.0	-144,147	0.0	-144,147	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEMS

March		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3 46.8	-43,923	0.0	0	0.0	-85,118	0.0	-85,118	0.0	-85,118	0.0
2	48.7 44.6	-61,177	0.0	-89,303	0.0	-102,382	0.0	-102,382	0.0	-102,382	0.0
3	46.6 42.9	-72,757	0.0	-118,199	0.0	-118,199	0.0	-118,199	0.0	-118,199	0.0
4	44.9 41.4	-83,535	0.0	-128,787	0.0	-128,787	0.0	-128,787	0.0	-128,787	0.0
5	43.9 40.8	-91,822	0.0	-136,932	0.0	-136,932	0.0	-136,932	0.0	-136,932	0.0
6	43.5 40.8	-98,190	0.0	-149,493	0.0	-149,493	0.0	-149,493	0.0	-149,493	0.0
7	44.0 41.4	-97,707	0.0	-150,051	0.0	-150,051	0.0	-150,051	0.0	-150,051	0.0
8	45.4 42.7	-76,513	0.0	-138,569	0.0	-138,569	0.0	-138,569	0.0	-138,569	0.0
9	47.7 44.3	-42,494	0.0	-122,926	0.0	-122,926	0.0	-122,926	0.0	-122,926	0.0
10	50.6 45.8	0	0.0	-100,071	0.0	-100,071	0.0	-100,071	0.0	-100,071	0.0
11	53.9 47.4	0	0.0	-64,392	0.0	-64,392	0.0	-64,392	0.0	-64,392	0.0
12	57.4 49.0	0	0.0	-33,815	0.0	-33,815	0.0	-33,815	0.0	-33,815	0.0
13	60.7 50.8	0	2.2	-8,567	0.0	-8,567	0.0	-8,567	0.0	-8,567	0.0
14	63.6 52.7	0	10.0	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9 53.7	0	12.2	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3 54.4	0	13.2	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8 54.6	0	13.2	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4 54.8	0	11.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4 55.2	0	8.1	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7 56.0	0	4.8	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5 56.0	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0 54.1	-2,998	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1 51.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.2 49.4	0	0.0	-45,351	0.0	-45,351	0.0	-45,351	0.0	-45,351	0.0

April		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0 56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9 54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0 53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4 52.4	-3,346	0.0	-31,861	0.0	-49,274	0.0	-49,274	0.0	-49,274	0.0
5	54.2 51.4	-25,238	0.0	-73,482	0.0	-73,482	0.0	-73,482	0.0	-73,482	0.0
6	53.5 50.9	-31,506	0.0	-81,191	0.0	-81,191	0.0	-81,191	0.0	-81,191	0.0
7	53.2 51.1	-21,729	0.0	-83,354	0.0	-83,354	0.0	-83,354	0.0	-83,354	0.0
8	53.9 51.5	0	0.0	-74,667	0.0	-74,667	0.0	-74,667	0.0	-74,667	0.0
9	55.9 52.1	0	0.0	-63,932	0.0	-63,932	0.0	-63,932	0.0	-63,932	0.0
10	58.9 53.2	0	0.0	-34,085	0.0	-34,085	0.0	-34,085	0.0	-34,085	0.0
11	62.6 55.2	0	0.1	-2,966	0.0	-2,966	0.0	-2,966	0.0	-2,966	0.0
12	66.5 57.3	0	9.7	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2 59.6	0	12.3	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2 61.0	0	14.5	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2 62.2	0	16.1	0	3.9	0	3.9	0	3.9	0	3.9
16	75.9 62.2	0	17.0	0	7.0	0	7.0	0	7.0	0	7.0
17	75.6 62.0	0	17.1	0	7.3	0	7.3	0	7.3	0	7.3
18	74.9 61.7	0	16.1	0	6.7	0	6.7	0	6.7	0	6.7
19	73.7 62.0	0	13.2	0	5.4	0	5.4	0	5.4	0	5.4
20	72.1 62.4	0	10.2	0	3.8	0	3.8	0	3.8	0	3.8
21	70.2 63.3	0	7.3	0	2.2	0	2.2	0	2.2	0	2.2
22	68.0 62.5	0	4.9	0	0.6	0	0.6	0	0.6	0	0.6
23	65.7 60.5	0	3.1	-9,448	0.0	-9,448	0.0	-9,448	0.0	-9,448	0.0
24	63.4 58.5	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEMS

May	----- Design -----						----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		2.4		0		0.8		0		0.8		0		0.8		0		0.8
2	65.7	61.5		0		2.9		-8,568		0.0		-8,568		0.0		-8,568		0.0		-8,568		0.0
3	63.6	59.7		0		1.9		0		0.0		0		0.0		0		0.0		0		0.0
4	61.8	58.4		0		1.0		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1		0		0.3		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5		-2,887		0.0		0		0.0		0		0.0		0		0.0		0		0.0
7	59.4	56.5		0		1.3		-3,330		0.0		-3,330		0.0		-3,330		0.0		-3,330		0.0
8	60.1	56.3		0		3.3		-24,451		0.0		-24,451		0.0		-24,451		0.0		-24,451		0.0
9	62.4	56.3		0		5.9		-13,968		0.0		-13,968		0.0		-13,968		0.0		-13,968		0.0
10	65.7	57.2		0		8.7		0		0.0		0		0.0		0		0.0		0		0.0
11	69.9	58.9		0		11.4		0		0.0		0		0.0		0		0.0		0		0.0
12	74.3	60.9		0		14.1		0		0.0		0		0.0		0		0.0		0		0.0
13	78.5	63.7		0		16.6		0		2.2		0		2.2		0		2.2		0		2.2
14	81.9	65.3		0		18.7		0		9.2		0		9.2		0		9.2		0		9.2
15	84.1	66.9		0		20.5		0		11.2		0		11.2		0		11.2		0		11.2
16	84.9	67.1		0		21.6		0		11.9		0		11.9		0		11.9		0		11.9
17	84.6	67.3		0		21.9		0		12.2		0		12.2		0		12.2		0		12.2
18	83.8	67.1		0		20.7		0		11.9		0		11.9		0		11.9		0		11.9
19	82.4	67.5		0		18.7		0		11.0		0		11.0		0		11.0		0		11.0
20	80.6	68.9		0		15.1		0		8.8		0		8.8		0		8.8		0		8.8
21	78.5	71.0		0		12.5		0		7.0		0		7.0		0		7.0		0		7.0
22	76.1	69.9		0		9.8		0		5.7		0		5.7		0		5.7		0		5.7
23	73.4	68.0		0		7.6		0		3.8		0		3.8		0		3.8		0		3.8
24	70.8	65.5		0		6.1		0		2.1		0		2.1		0		2.1		0		2.1

June	----- Design -----						----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		10.7		0		4.3		0		5.2		0		5.2		0		5.2
2	72.6	68.4		0		8.5		0		3.3		0		3.7		0		3.7		0		3.7
3	70.9	67.3		0		6.9		0		2.0		0		2.1		0		2.1		0		2.1
4	69.6	66.5		0		6.0		0		1.2		0		1.2		0		1.2		0		1.2
5	68.7	65.8		0		5.3		-1,339		0.0		-1,339		0.0		-1,339		0.0		-1,339		0.0
6	68.5	65.7		0		5.1		-4,291		0.0		-4,291		0.0		-4,291		0.0		-4,291		0.0
7	69.0	66.3		0		6.4		0		0.3		0		0.3		0		0.3		0		0.3
8	70.6	66.9		0		9.4		0		1.4		0		1.4		0		1.4		0		1.4
9	73.0	67.7		0		12.2		0		3.0		0		3.0		0		3.0		0		3.0
10	76.1	68.1		0		15.2		0		5.6		0		5.6		0		5.6		0		5.6
11	79.5	69.1		0		17.8		0		8.3		0		8.5		0		8.5		0		8.5
12	82.9	70.1		0		20.7		0		10.6		0		10.6		0		10.6		0		10.6
13	86.0	71.0		0		22.9		0		13.0		0		13.0		0		13.0		0		13.0
14	88.4	72.5		0		25.1		0		15.7		0		15.7		0		15.7		0		15.7
15	90.0	74.0		0		26.6		0		18.7		0		18.7		0		18.7		0		18.7
16	90.5	73.7		0		27.9		0		18.3		0		18.3		0		18.3		0		18.3
17	90.3	74.2		0		27.9		0		19.1		0		19.1		0		19.1		0		19.1
18	89.4	73.9		0		27.0		0		18.8		0		18.8		0		18.8		0		18.8
19	88.1	74.5		0		25.0		0		17.6		0		17.6		0		17.6		0		17.6
20	86.4	75.3		0		21.0		0		15.1		0		15.1		0		15.1		0		15.1
21	84.3	76.5		0		18.1		0		13.6		0		13.6		0		13.6		0		13.6
22	81.9	75.7		0		15.8		0		11.8		0		11.8		0		11.8		0		11.8
23	79.5	74.0		0		13.4		0		9.6		0		9.6		0		9.6		0		9.6
24	77.0	72.1		0		11.8		0		7.6		0		7.6		0		7.6		0		7.6

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEMS

July			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5		0		10.6		0		3.2		0		4.0		0		4.0		0		4.0
2	72.4	69.4		0		8.1		0		2.5		0		2.9		0		2.9		0		2.9
3	71.3	68.4		0		7.2		0		1.7		0		1.7		0		1.7		0		1.7
4	70.5	67.7		0		6.4		0		0.8		0		0.8		0		0.8		0		0.8
5	70.0	67.4		0		5.6	-847		0	0.0	-847		0	0.0	-847		0	0.0	-847		0	0.0
6	69.9	67.5		0		5.4		0		0.0		0		0.0		0		0.0		0		0.0
7	70.3	68.0		0		7.2		0		0.0		0		0.0		0		0.0		0		0.0
8	71.7	69.0		0		9.7		0		1.1		0		1.1		0		1.1		0		1.1
9	73.7	69.5		0		12.3		0		3.8		0		3.8		0		3.8		0		3.8
10	76.2	70.6		0		14.7		0		6.6		0		6.6		0		6.6		0		6.6
11	78.9	71.8		0		17.5		0		8.5		0		8.5		0		8.5		0		8.5
12	81.4	73.0		0		20.2		0		11.4		0		11.4		0		11.4		0		11.4
13	83.4	74.4		0		21.9		0		13.7		0		13.7		0		13.7		0		13.7
14	84.8	74.8		0		24.1		0		15.3		0		15.3		0		15.3		0		15.3
15	85.2	75.0		0		25.7		0		16.8		0		16.8		0		16.8		0		16.8
16	85.1	75.0		0		26.8		0		17.0		0		17.0		0		17.0		0		17.0
17	84.6	74.7		0		26.9		0		16.6		0		16.6		0		16.6		0		16.6
18	83.8	74.6		0		25.9		0		16.8		0		16.8		0		16.8		0		16.8
19	82.7	74.6		0		24.0		0		15.5		0		15.5		0		15.5		0		15.5
20	81.4	74.4		0		20.2		0		12.9		0		12.9		0		12.9		0		12.9
21	79.9	74.9		0		17.5		0		11.1		0		11.1		0		11.1		0		11.1
22	78.4	74.0		0		15.3		0		9.7		0		9.7		0		9.7		0		9.7
23	76.8	72.7		0		12.8		0		7.0		0		7.0		0		7.0		0		7.0
24	75.2	71.6		0		11.2		0		5.6		0		5.6		0		5.6		0		5.6

August			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0		11.1		0		4.0		0		5.1		0		5.1		0		5.1
2	73.2	70.3		0		8.5		0		3.4		0		3.6		0		3.6		0		3.6
3	71.7	68.9		0		6.9		0		2.4		0		2.4		0		2.4		0		2.4
4	70.4	67.8		0		5.6		0		0.9		0		0.9		0		0.9		0		0.9
5	69.5	66.8		0		5.2		-989		0.0		-989		0.0		-989		0.0		-989		0.0
6	68.9	66.4		0		4.7		0		0.0		0		0.0		0		0.0		0		0.0
7	68.7	66.4		0		5.3		0		0.0		0		0.0		0		0.0		0		0.0
8	69.2	66.8		0		7.9		0		0.0		0		0.0		0		0.0		0		0.0
9	70.8	67.7		0		11.0		0		0.5		0		0.5		0		0.5		0		0.5
10	73.2	67.7		0		13.9		0		4.2		0		4.2		0		4.2		0		4.2
11	76.2	68.8		0		17.2		0		7.2		0		7.2		0		7.2		0		7.2
12	79.3	70.3		0		20.2		0		10.1		0		10.1		0		10.1		0		10.1
13	82.3	72.2		0		22.9		0		12.6		0		12.6		0		12.6		0		12.6
14	84.7	73.7		0		25.1		0		15.2		0		15.2		0		15.2		0		15.2
15	86.3	74.6		0		27.3		0		17.2		0		17.2		0		17.2		0		17.2
16	86.8	75.1		0		28.2		0		18.4		0		18.4		0		18.4		0		18.4
17	86.6	75.1		0		27.4		0		18.3		0		18.3		0		18.3		0		18.3
18	86.0	75.3		0		26.0		0		18.1		0		18.1		0		18.1		0		18.1
19	85.1	76.0		0		23.4		0		16.2		0		16.2		0		16.2		0		16.2
20	83.8	76.8		0		20.0		0		14.4		0		14.4		0		14.4		0		14.4
21	82.3	77.2		0		17.4		0		12.7		0		12.7		0		12.7		0		12.7
22	80.6	76.3		0		15.0		0		11.2		0		11.2		0		11.2		0		11.2
23	78.7	75.3		0		12.3		0		9.1		0		9.1		0		9.1		0		9.1
24	76.8	73.7		0		10.9		0		7.3		0		7.3		0		7.3		0		7.3

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADE	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	5.9	0	1.2	0	1.4	0	1.4	0	1.4
2	67.6	65.0	0	4.0	-2,219	0.0	-2,219	0.0	-2,219	0.0	-2,219	0.0
3	65.8	63.4	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	2.9	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	5.7	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	9.1	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	13.0	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	16.6	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	19.4	0	6.7	0	6.7	0	6.7	0	6.7
14	81.2	68.4	0	21.7	0	11.4	0	11.5	0	11.5	0	11.5
15	83.0	70.0	0	24.0	0	13.2	0	13.2	0	13.2	0	13.2
16	83.7	70.5	0	24.8	0	14.5	0	14.5	0	14.5	0	14.5
17	83.4	70.5	0	24.0	0	14.4	0	14.4	0	14.4	0	14.4
18	82.8	70.9	0	21.6	0	13.2	0	13.2	0	13.2	0	13.2
19	81.6	72.7	0	17.9	0	11.3	0	11.3	0	11.3	0	11.3
20	80.1	74.7	0	15.6	0	10.4	0	10.4	0	10.4	0	10.4
21	78.3	74.1	0	13.0	0	8.9	0	8.9	0	8.9	0	8.9
22	76.3	72.4	0	10.2	0	6.9	0	6.9	0	6.9	0	6.9
23	74.1	70.7	0	8.2	0	4.4	0	4.4	0	4.4	0	4.4
24	71.8	68.9	0	6.5	0	2.8	0	2.8	0	2.8	0	2.8

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADE	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-63,936	0.0	-63,936	0.0	-63,936	0.0
2	50.1	48.6	0	0.0	-26,180	0.0	-85,019	0.0	-85,019	0.0	-85,019	0.0
3	48.4	46.9	0	0.0	-99,772	0.0	-99,772	0.0	-99,772	0.0	-99,772	0.0
4	47.1	45.8	-64,680	0.0	-110,192	0.0	-110,192	0.0	-110,192	0.0	-110,192	0.0
5	46.3	44.8	-77,922	0.0	-123,007	0.0	-123,007	0.0	-123,007	0.0	-123,007	0.0
6	46.0	44.5	-83,430	0.0	-131,639	0.0	-131,639	0.0	-131,639	0.0	-131,639	0.0
7	46.8	45.3	-82,600	0.0	-131,016	0.0	-131,016	0.0	-131,016	0.0	-131,016	0.0
8	48.9	47.5	-60,379	0.0	-117,893	0.0	-117,893	0.0	-117,893	0.0	-117,893	0.0
9	52.2	49.9	-18,139	0.0	-93,802	0.0	-93,802	0.0	-93,802	0.0	-93,802	0.0
10	56.2	52.5	0	0.0	-67,551	0.0	-67,551	0.0	-67,551	0.0	-67,551	0.0
11	60.4	54.4	0	0.0	-28,922	0.0	-28,922	0.0	-28,922	0.0	-28,922	0.0
12	64.4	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	0	9.5	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	12.3	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	14.3	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	15.0	0	2.1	0	2.1	0	2.1	0	2.1
17	69.5	57.3	0	14.3	0	4.2	0	4.2	0	4.2	0	4.2
18	68.2	57.7	0	11.2	0	2.9	0	2.9	0	2.9	0	2.9
19	66.5	60.6	0	8.2	0	1.0	0	1.0	0	1.0	0	1.0
20	64.4	60.8	0	5.2	-3,584	0.0	-3,584	0.0	-3,584	0.0	-3,584	0.0
21	62.1	59.4	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	-18,287	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	-2,368	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COILS SYSTEMS

November			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	52.0	49.2	-41,356	0.0		0	0.0		-79,791	0.0		-79,791	0.0		-79,791	0.0	
2	49.4	47.3	-67,365	0.0		-86,180	0.0		-92,524	0.0		-92,524	0.0		-92,524	0.0	
3	47.2	45.3	-82,563	0.0		-108,322	0.0		-108,322	0.0		-108,322	0.0		-108,322	0.0	
4	45.3	43.4	-92,298	0.0		-122,814	0.0		-122,814	0.0		-122,814	0.0		-122,814	0.0	
5	43.9	42.2	-100,525	0.0		-132,182	0.0		-132,182	0.0		-132,182	0.0		-132,182	0.0	
6	43.0	41.4	-106,446	0.0		-144,598	0.0		-144,598	0.0		-144,598	0.0		-144,598	0.0	
7	42.7	41.2	-105,559	0.0		-151,504	0.0		-151,504	0.0		-151,504	0.0		-151,504	0.0	
8	43.5	42.0	-95,273	0.0		-148,670	0.0		-148,670	0.0		-148,670	0.0		-148,670	0.0	
9	45.9	44.0	-49,629	0.0		-128,579	0.0		-128,579	0.0		-128,579	0.0		-128,579	0.0	
10	49.4	46.6	-4,626	0.0		-102,685	0.0		-102,685	0.0		-102,685	0.0		-102,685	0.0	
11	53.8	48.6	0	0.0		-73,274	0.0		-73,274	0.0		-73,274	0.0		-73,274	0.0	
12	58.4	50.6	0	0.0		-40,266	0.0		-40,266	0.0		-40,266	0.0		-40,266	0.0	
13	62.8	52.6	0	2.6		-14,328	0.0		-14,328	0.0		-14,328	0.0		-14,328	0.0	
14	66.3	54.5	0	10.8		0	0.0		0	0.0		0	0.0		0	0.0	
15	68.7	55.7	0	12.8		0	0.0		0	0.0		0	0.0		0	0.0	
16	69.5	56.1	0	13.8		0	0.0		0	0.0		0	0.0		0	0.0	
17	69.2	55.8	0	12.3		0	0.0		0	0.0		0	0.0		0	0.0	
18	68.3	57.0	0	9.1		0	0.0		0	0.0		0	0.0		0	0.0	
19	66.9	59.4	0	6.3		0	0.0		0	0.0		0	0.0		0	0.0	
20	65.0	59.4	0	3.4		0	0.0		0	0.0		0	0.0		0	0.0	
21	62.8	58.2	0	0.9		0	0.0		0	0.0		0	0.0		0	0.0	
22	60.2	56.1	-14,601	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
23	57.5	54.0	-1,853	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
24	54.7	51.7	0	0.0		-53,057	0.0		-53,057	0.0		-53,057	0.0		-53,057	0.0	

December			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	44.9	42.5	-88,842	0.0		-129,669	0.0		-129,668	0.0		-129,668	0.0		-129,668	0.0	
2	43.2	41.1	-100,121	0.0		-144,880	0.0		-144,880	0.0		-144,880	0.0		-144,880	0.0	
3	41.8	39.8	-110,346	0.0		-153,735	0.0		-153,735	0.0		-153,735	0.0		-153,735	0.0	
4	40.7	38.7	-119,629	0.0		-162,123	0.0		-162,123	0.0		-162,123	0.0		-162,123	0.0	
5	40.1	38.4	-127,844	0.0		-169,648	0.0		-169,648	0.0		-169,648	0.0		-169,648	0.0	
6	39.9	38.4	-133,272	0.0		-176,527	0.0		-176,527	0.0		-176,527	0.0		-176,527	0.0	
7	40.5	39.0	-133,031	0.0		-182,139	0.0		-182,139	0.0		-182,139	0.0		-182,139	0.0	
8	42.2	40.7	-129,736	0.0		-180,514	0.0		-180,514	0.0		-180,514	0.0		-180,514	0.0	
9	44.9	43.4	-94,574	0.0		-156,943	0.0		-156,943	0.0		-156,943	0.0		-156,943	0.0	
10	48.2	45.8	-55,083	0.0		-131,114	0.0		-131,114	0.0		-131,114	0.0		-131,114	0.0	
11	51.7	48.3	-13,235	0.0		-101,548	0.0		-101,548	0.0		-101,548	0.0		-101,548	0.0	
12	55.0	50.7	0	0.0		-73,483	0.0		-73,483	0.0		-73,483	0.0		-73,483	0.0	
13	57.7	52.0	0	0.0		-49,639	0.0		-49,639	0.0		-49,639	0.0		-49,639	0.0	
14	59.5	52.6	0	0.0		-27,337	0.0		-27,337	0.0		-27,337	0.0		-27,337	0.0	
15	60.1	52.7	0	5.7		-12,114	0.0		-12,114	0.0		-12,114	0.0		-12,114	0.0	
16	59.9	52.6	0	8.4		-2,653	0.0		-2,653	0.0		-2,653	0.0		-2,653	0.0	
17	59.2	52.1	0	7.2		-7,902	0.0		-7,902	0.0		-7,902	0.0		-7,902	0.0	
18	58.2	51.8	0	4.1		-26,588	0.0		-26,588	0.0		-26,588	0.0		-26,588	0.0	
19	56.8	52.2	0	1.5		-41,079	0.0		-41,079	0.0		-41,079	0.0		-41,079	0.0	
20	55.0	51.4	-10,458	0.0		-58,020	0.0		-58,020	0.0		-58,020	0.0		-58,020	0.0	
21	53.1	50.1	0	0.0		-73,182	0.0		-73,182	0.0		-73,182	0.0		-73,182	0.0	
22	51.0	48.1	0	0.0		-88,159	0.0		-88,159	0.0		-88,159	0.0		-88,159	0.0	
23	48.9	46.2	0	0.0		-101,745	0.0		-101,745	0.0		-101,745	0.0		-101,745	0.0	
24	46.9	44.1	-47,280	0.0		-117,509	0.0		-117,509	0.0		-117,509	0.0		-117,509	0.0	

01 Card - Job Information

 Project: ENERGY STUDY OF HEATING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29603 (2 BUILDINGS)

-----CARD 08-- Climatic Information-----

Weather	Summer Clearness Code	Winter Clearness Number	Summer Design Dry Bulb	Summer Design Wet Bulb	Winter Design Dry Bulb	Building Orientation	Summer Ground Reflect	Winter Ground Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	OFFICES

-----CARD 20-- General Room Parameters-----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BASEMENT	80.75	40.75	3	0		10.5	3		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				11			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	80.75	10		196	0			
1	2	40.75	10.5		196	90			
1	3	80.75	10.5		196	180			
1	4	40.75	10.5		196	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret.	Visible Transmittance	Inside Visible Reflectance
1	1	25.6	10	1	1.03	.7					
1	2	3.75	2.5	17	1.03	.7					
1	3	25.6	10	1	1.03	.7					
1	4	3.75	2.5	17	1.03	.7					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	27	PEOPLE	255	325	1.9	WATT-SF	ASHRAE2				

Room Number	Misc Equipment Number	Misc Equipment Descrip	Energy Consump Value	Energy Consump Units	Energy Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	29.1	KW	FGHEAT						

Room Number	Ventilation				Infiltration				Reheat Minimum	
	Cooling		Heating		Cooling		Heating		Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

Room Number	Main				Auxiliary				Room Exhaust	
	Cooling		Heating		Cooling		Heating		Value	Units
1	1	CFM-SF	1	CFM-SF						

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-----CARD 39-- System Alternative -----
Number      Description
1           FAN COILS SYSTEMS

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System		-----OPTIONAL VENTILATION SYSTEM-----					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBvh	SADBvh	Schedule	Schedule	Pressure
1	FC						

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

FC FAN COIL

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 75
24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: OSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: OSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 72
24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		100
24		

```
*****  
*****  
**                                     **  
**          TRACE    600    ANALYSIS          **  
**                                     **  
**          by              **  
**                                     **  
*****  
*****
```

ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29604 (2 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 13: 9:27 8/19/94
Dataset Name: FGTYP57 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)					Mo/Hr: 8/15		*	Mo/Hr: 6/16		*	Mo/Hr: 13/ 1			*	
Outside Air ==)					OADB/WB/HR: 97/ 76/105.0		*	OADB: 100		*	OADB: 23			*	
							*			*				*	
	Space	Ret. Air	Ret. Air	Net	Percent	*		Space	Percent	*	Space Peak	Coil Peak	Percent		
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*		Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot		
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*		(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)		
Envelope Loads						*				*					
Skylite Solr	0	0		0	0.00	*		0	0.00	*	0	0	0.00		
Skylite Cond	0	0		0	0.00	*		0	0.00	*	0	0	0.00		
Roof Cond	29.093	0		29.093	16.50	*		30.584	34.80	*	-15.966	-15.966	8.67		
Glass Solar	8,959	0		8,959	5.08	*		8,092	9.21	*	0	0	0.00		
Glass Cond	5.805	0		5,805	3.29	*		6,787	7.72	*	-14,645	-14,645	7.95		
Wall Cond	31.271	0		31,271	17.74	*		34,398	39.14	*	-52,118	-52,118	28.31		
Partition	0			0	0.00	*		0	0.00	*	0	0	0.00		
Exposed Floor	0			0	0.00	*		0	0.00	*	0	0	0.00		
Infiltration	15,124			15,124	8.58	*		8,018	9.12	*	-18,260	-18,260	9.92		
Sub Total==)	90,252	0		90,252	51.19	*		87.879	100.00	*	-100,989	-100,989	54.85		
Internal Loads						*				*					
Lights	0	0		0	0.00	*		0	0.00	*	0	0	0.00		
People	0			0	0.00	*		0	0.00	*	0	0	0.00		
Misc	0	0	0	0	0.00	*		0	0.00	*	0	0	0.00		
Sub Total==)	0	0	0	0	0.00	*		0	0.00	*	0	0	0.00		
Ceiling Load	0	0		0	0.00	*		0	0.00	*	0	0	0.00		
Outside Air	0	0	0	86,062	48.81	*		0	0.00	*	0	-83,124	45.15		
Sup. Fan Heat				0	0.00	*			0.00	*		0	0.00		
Ret. Fan Heat		0		0	0.00	*			0.00	*		0	0.00		
Duct Heat Pkup		0		0	0.00	*			0.00	*		0	0.00		
OV/UNDR Sizing	0			0	0.00	*		0	0.00	*	0	0	0.00		
Exhaust Heat		0	0	0	0.00	*			0.00	*		0	0.00		
Terminal Bypass		0	0	0	-0.00	*			0.00	*		0	0.00		
							*								*
Grand Total==)	90.252	0	0	176,314	100.00	*		87,879	100.00	*	-100,989	-184,113	100.00		

-----COOLING COIL SELECTION-----											-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR				Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	3,842	
Main Clg	14.7	176.3	122.0	4,026	83.9	68.7	81.7	55.3	54.6	62.7	Part	0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	3,842	0 0
Totals	14.7	176.3									Wall	3,658	289 8

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	41.4	Type	Clg	Htg	
(Mbh)	(cfm)	Deg F	Deg F	Vent	1,665	1,665	Clg Cfm/Sqft	1.05	SADB	55.3	90.6	
Main Htg	-157.6	4,026	55.3	90.6	Infil	293	366	Clg Cfm/Ton	273.98	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	4,026	4,026	Clg Sqft/Ton	261.52	Return	75.0	68.0
Preheat	-26.5	4,026	49.4	55.3	Mincfm	0	0	Clg Btuh/Sqft	45.89	Ret/OA	83.9	49.4
Reheat	0.0	0	0.0	0.0	Return	4,026	4,026	No. People	111	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	1,665	1,665	Htg % OA	41.4	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.05	Fn BldTD	0.0	0.0
Total	-184.1				Auxil	0	0	Htg Btuh/Sqft	-47.91	Fn Frict	0.0	0.0

System 2 Block UH - UNIT HEATERS

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==) Mo/Hr: 0/ 0 * Mo/Hr: 0/ 0 * Mo/Hr: 13/ 1
Outside Air ==) OADB/WB/HR: 0/ 0/ 0.0 * OADB: 0 * OADB: 23

	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Percent Of Tot (%)	*	Space Sensible (Btuh)	Percent Of Tot (%)	*	Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Percent Of Tot (%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	0	0		0	0.00	*	0	0.00	*	-1,817	-1,817	9.31
Glass Solar	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Glass Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Wall Cond	0	0		0	0.00	*	0	0.00	*	-13,376	-13,376	68.56
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	0			0	0.00	*	0	0.00	*	-4,316	-4,316	22.12
Sub Total==>	0	0		0	0.00	*	0	0.00	*	-19,509	-19,509	100.00
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
Grand Total==>	0	0	0	0	0.00	*	0	0.00	*	-19,509	-19,509	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----	
	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)
				Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	437
Main Clg	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0
Aux Clg	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	437 0 0
Totals	0.0	0.0								Wall	865 0 0

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating	Clg % OA		Type	Clg	Htg
					Vent	0	0	Clg Cfm/Saft	0.0	SADB	0.0	108.2
Main Htg	-19.5	437	68.0	108.2	Infil	0	86	Clg Cfm/Ton	0.00	Plenum	0.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	0	437	Clg Saft/Ton	0.00	Return	0.0	68.0
Preheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Saft	0.00	Ret/OA	0.0	68.0
Reheat	0.0	0	0.0	0.0	Return	0	437	No. People	0	Runarnd	0.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	0	0	Htg % OA	0.0	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SaFt	1.00	Fn BldTD	0.0	0.0
Total	-19.5				Auxil	0	0	Htg Btuh/SoFt	-44.62	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	QAWR	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-108,315	0.0	-130,057	0.0	-129,764	0.0	-129,764	0.0	-129,764	0.0
2	32.9	30.7	-101,831	0.0	-133,989	0.0	-133,989	0.0	-133,989	0.0	-133,989	0.0
3	33.1	31.3	-104,839	0.0	-136,325	0.0	-136,325	0.0	-136,325	0.0	-136,325	0.0
4	33.9	32.1	-106,798	0.0	-135,943	0.0	-135,943	0.0	-135,943	0.0	-135,943	0.0
5	35.2	33.5	-108,219	0.0	-133,918	0.0	-133,918	0.0	-133,918	0.0	-133,918	0.0
6	37.0	35.4	-106,703	0.0	-127,275	0.0	-127,275	0.0	-127,275	0.0	-127,275	0.0
7	39.0	37.6	-102,678	0.0	-120,455	0.0	-120,455	0.0	-120,455	0.0	-120,455	0.0
8	41.3	40.1	-95,606	0.0	-112,053	0.0	-112,053	0.0	-112,053	0.0	-112,053	0.0
9	43.7	42.5	-84,805	0.0	-103,511	0.0	-103,511	0.0	-103,511	0.0	-103,511	0.0
10	46.1	44.0	-71,450	0.0	-94,527	0.0	-94,527	0.0	-94,527	0.0	-94,527	0.0
11	48.4	45.0	-55,507	0.0	-85,129	0.0	-85,129	0.0	-85,129	0.0	-85,129	0.0
12	50.5	45.6	-39,577	0.0	-76,194	0.0	-76,194	0.0	-76,194	0.0	-76,194	0.0
13	52.2	46.1	-26,821	0.0	-68,383	0.0	-68,383	0.0	-68,383	0.0	-68,383	0.0
14	53.5	46.4	-17,637	0.0	-62,114	0.0	-62,114	0.0	-62,114	0.0	-62,114	0.0
15	54.3	46.3	-13,192	0.0	-57,731	0.0	-57,731	0.0	-57,731	0.0	-57,731	0.0
16	54.6	46.1	-13,456	0.0	-55,126	0.0	-55,126	0.0	-55,126	0.0	-55,126	0.0
17	54.0	45.9	-17,790	0.0	-56,543	0.0	-56,543	0.0	-56,543	0.0	-56,543	0.0
18	52.5	45.0	-26,335	0.1	-61,923	0.0	-61,923	0.0	-61,923	0.0	-61,923	0.0
19	50.1	44.8	-36,805	0.2	-70,933	0.0	-70,933	0.0	-70,933	0.0	-70,933	0.0
20	47.1	43.3	-49,049	0.1	-82,949	0.0	-82,949	0.0	-82,949	0.0	-82,949	0.0
21	43.7	40.4	-59,229	0.1	-96,308	0.0	-96,308	0.0	-96,308	0.0	-96,308	0.0
22	40.4	37.3	-69,343	0.0	-109,546	0.0	-109,546	0.0	-109,546	0.0	-109,546	0.0
23	37.3	34.9	-77,261	0.0	-115,285	0.0	-115,285	0.0	-115,285	0.0	-115,285	0.0
24	34.9	32.6	-84,197	0.0	-123,070	0.0	-123,070	0.0	-123,070	0.0	-123,070	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	QAWR	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-85,170	0.0	-104,486	0.0	-106,914	0.0	-106,915	0.0	-106,915	0.0
2	39.7	37.1	-89,920	0.0	-113,121	0.0	-114,955	0.0	-114,955	0.0	-114,955	0.0
3	37.8	35.1	-94,257	0.0	-120,287	0.0	-122,601	0.0	-122,601	0.0	-122,601	0.0
4	36.3	33.8	-97,813	0.0	-125,992	0.0	-128,509	0.0	-128,509	0.0	-128,509	0.0
5	35.1	32.6	-99,796	0.0	-132,173	0.0	-133,925	0.0	-133,925	0.0	-133,925	0.0
6	34.4	32.0	-99,430	0.0	-135,209	0.0	-136,772	0.0	-136,772	0.0	-136,772	0.0
7	34.1	31.9	-96,351	0.0	-138,126	0.0	-138,240	0.0	-138,241	0.0	-138,241	0.0
8	34.6	32.4	-90,356	0.0	-136,780	0.0	-136,865	0.0	-136,865	0.0	-136,865	0.0
9	36.0	33.8	-80,916	0.0	-131,472	0.0	-131,536	0.0	-131,536	0.0	-131,536	0.0
10	38.2	34.7	-68,357	0.0	-123,026	0.0	-123,074	0.0	-123,074	0.0	-123,074	0.0
11	40.9	36.2	-53,868	0.0	-112,105	0.0	-112,141	0.0	-112,141	0.0	-112,141	0.0
12	43.9	37.4	-39,424	0.0	-99,850	0.0	-99,877	0.0	-99,877	0.0	-99,877	0.0
13	46.9	39.4	-27,569	0.0	-86,815	0.0	-86,835	0.0	-86,835	0.0	-86,835	0.0
14	49.7	41.4	-19,095	0.0	-74,660	0.0	-74,675	0.0	-74,675	0.0	-74,675	0.0
15	51.8	42.8	-14,176	0.0	-65,642	0.0	-65,654	0.0	-65,654	0.0	-65,654	0.0
16	53.2	43.9	-14,558	0.0	-59,599	0.0	-59,607	0.0	-59,607	0.0	-59,607	0.0
17	53.7	44.2	-18,062	0.0	-57,143	0.0	-57,150	0.0	-57,150	0.0	-57,150	0.0
18	53.4	44.4	-26,195	0.0	-58,001	0.0	-58,006	0.0	-58,006	0.0	-58,006	0.0
19	52.7	44.4	-34,266	0.2	-60,966	0.0	-60,970	0.0	-60,970	0.0	-60,970	0.0
20	51.5	45.2	-41,754	0.5	-66,078	0.0	-66,081	0.0	-66,081	0.0	-66,081	0.0
21	50.0	44.6	-52,077	0.3	-72,554	0.0	-72,557	0.0	-72,557	0.0	-72,557	0.0
22	48.1	43.3	-65,449	0.1	-80,499	0.0	-80,501	0.0	-80,501	0.0	-80,501	0.0
23	46.1	41.8	-73,031	0.0	-88,874	0.0	-88,875	0.0	-88,875	0.0	-88,875	0.0
24	43.9	40.1	-80,194	0.0	-97,882	0.0	-97,883	0.0	-97,883	0.0	-97,883	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-40,619	0.0	-46,202	0.6	-63,196	0.0	-63,196	0.0	-63,196	0.0
2	48.7	44.6	-45,139	0.0	-63,697	0.2	-73,543	0.0	-73,543	0.0	-73,543	0.0
3	46.6	42.9	-49,810	0.0	-75,030	0.0	-82,041	0.0	-82,041	0.0	-82,041	0.0
4	44.9	41.4	-53,786	0.0	-82,026	0.1	-89,024	0.0	-89,024	0.0	-89,024	0.0
5	43.9	40.8	-55,490	0.0	-90,606	0.0	-92,951	0.0	-92,951	0.0	-92,951	0.0
6	43.5	40.8	-54,433	0.0	-94,127	0.0	-94,163	0.0	-94,163	0.0	-94,163	0.0
7	44.0	41.4	-50,647	0.0	-93,641	0.0	-93,641	0.0	-93,641	0.0	-93,641	0.0
8	45.4	42.7	-42,468	0.0	-88,353	0.0	-88,353	0.0	-88,353	0.0	-88,353	0.0
9	47.7	44.3	-30,182	0.0	-79,826	0.0	-79,826	0.0	-79,826	0.0	-79,826	0.0
10	50.6	45.8	-14,782	0.0	-67,992	0.0	-67,992	0.0	-67,992	0.0	-67,992	0.0
11	53.9	47.4	-1,217	0.0	-54,567	0.0	-54,567	0.0	-54,567	0.0	-54,567	0.0
12	57.4	49.0	-238	0.0	-39,497	0.0	-39,497	0.0	-39,497	0.0	-39,497	0.0
13	60.7	50.8	0	0.4	-25,405	0.0	-25,405	0.0	-25,405	0.0	-25,405	0.0
14	63.6	52.7	0	0.5	-12,958	0.0	-12,958	0.0	-12,958	0.0	-12,958	0.0
15	65.9	53.7	0	2.3	-3,182	0.0	-3,182	0.0	-3,182	0.0	-3,182	0.0
16	67.3	54.4	0	3.5	-2,212	0.0	-2,212	0.0	-2,212	0.0	-2,212	0.0
17	67.8	54.6	0	2.9	-1,474	0.0	-1,474	0.0	-1,474	0.0	-1,474	0.0
18	67.4	54.8	0	2.0	-861	0.0	-861	0.0	-861	0.0	-861	0.0
19	66.4	55.2	0	0.7	-678	0.0	-678	0.0	-678	0.0	-678	0.0
20	64.7	56.0	0	0.0	-6,774	0.0	-6,774	0.0	-6,774	0.0	-6,774	0.0
21	62.5	56.0	-2,584	0.0	-16,543	0.0	-16,543	0.0	-16,543	0.0	-16,543	0.0
22	60.0	54.1	-13,651	0.0	-27,259	0.0	-27,259	0.0	-27,259	0.0	-27,259	0.0
23	57.1	51.9	-22,869	0.0	-39,445	0.0	-39,445	0.0	-39,445	0.0	-39,445	0.0
24	54.2	49.4	-29,433	0.0	-51,495	0.0	-51,495	0.0	-51,495	0.0	-51,495	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	-1,562	0.0	-12,232	0.0	-16,241	0.0	-16,241	0.0	-16,241	0.0
2	58.9	54.9	-6,074	0.0	-22,771	0.0	-25,515	0.0	-25,515	0.0	-25,515	0.0
3	57.0	53.5	-9,583	0.0	-30,998	0.1	-33,592	0.1	-33,592	0.1	-33,592	0.1
4	55.4	52.4	-12,060	0.0	-35,941	0.4	-41,133	0.0	-41,133	0.0	-41,133	0.0
5	54.2	51.4	-13,510	0.0	-44,698	0.1	-46,198	0.0	-46,198	0.0	-46,198	0.0
6	53.5	50.9	-11,842	0.0	-48,966	0.0	-49,241	0.0	-49,241	0.0	-49,241	0.0
7	53.2	51.1	-7,881	0.0	-50,436	0.0	-50,644	0.0	-50,644	0.0	-50,644	0.0
8	53.9	51.5	0	0.0	-47,840	0.0	-49,694	0.0	-49,694	0.0	-49,694	0.0
9	55.9	52.1	0	0.0	-39,926	0.0	-42,469	0.0	-42,469	0.0	-42,469	0.0
10	58.9	53.2	0	0.0	-27,827	0.0	-29,810	0.0	-29,810	0.0	-29,810	0.0
11	62.6	55.2	0	0.7	-12,755	0.0	-14,450	0.0	-14,450	0.0	-14,450	0.0
12	66.5	57.3	0	1.1	-632	0.0	-834	0.0	-834	0.0	-834	0.0
13	70.2	59.6	0	4.6	-420	0.0	-420	0.0	-420	0.0	-420	0.0
14	73.2	61.0	0	6.4	0	0.1	0	0.1	0	0.1	0	0.1
15	75.2	62.2	0	6.8	0	0.3	0	0.3	0	0.3	0	0.3
16	75.9	62.2	0	6.4	0	0.3	0	0.3	0	0.3	0	0.3
17	75.6	62.0	0	5.8	0	1.6	0	1.6	0	1.6	0	1.6
18	74.9	61.7	0	4.8	0	1.4	0	1.4	0	1.4	0	1.4
19	73.7	62.0	0	3.5	0	0.9	0	0.9	0	0.9	0	0.9
20	72.1	62.4	0	2.3	0	0.2	0	0.2	0	0.2	0	0.2
21	70.2	63.3	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
22	68.0	62.5	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.0	-4,937	0.0	-4,937	0.0	-4,937	0.0	-4,937	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

May	----- Design -----						----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
2	65.7	61.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
3	63.6	59.7		0		0.0		-2,720		0.0		-2,720		0.0		-2,720		0.0		-2,720		0.0
4	61.8	58.4		0		0.0		-11,548		0.0		-11,548		0.0		-11,548		0.0		-11,548		0.0
5	60.5	57.1		0		0.0		-17,969		0.0		-17,969		0.0		-17,969		0.0		-17,969		0.0
6	59.7	56.5		0		0.0		-22,173		0.0		-22,173		0.0		-22,173		0.0		-22,173		0.0
7	59.4	56.5		0		0.0		-24,020		0.0		-24,020		0.0		-24,020		0.0		-24,020		0.0
8	60.1	56.3		0		0.0		-21,866		0.0		-21,866		0.0		-21,866		0.0		-21,866		0.0
9	62.4	56.3		0		1.8		-12,805		0.0		-12,805		0.0		-12,805		0.0		-12,805		0.0
10	65.7	57.2		0		3.8		0		0.0		0		0.0		0		0.0		0		0.0
11	69.9	58.9		0		5.5		0		0.0		0		0.0		0		0.0		0		0.0
12	74.3	60.9		0		7.1		0		0.2		0		0.2		0		0.2		0		0.2
13	78.5	63.7		0		8.7		0		0.8		0		0.8		0		0.8		0		0.8
14	81.9	65.3		0		9.2		0		3.4		0		3.4		0		3.4		0		3.4
15	84.1	66.9		0		10.1		0		5.4		0		5.4		0		5.4		0		5.4
16	84.9	67.1		0		9.7		0		5.5		0		5.5		0		5.5		0		5.5
17	84.6	67.3		0		9.0		0		5.4		0		5.4		0		5.4		0		5.4
18	83.8	67.1		0		7.8		0		5.4		0		5.4		0		5.4		0		5.4
19	82.4	67.5		0		6.6		0		4.7		0		4.7		0		4.7		0		4.7
20	80.6	68.9		0		5.6		0		4.3		0		4.3		0		4.3		0		4.3
21	78.5	71.0		0		4.9		0		4.1		0		4.1		0		4.1		0		4.1
22	76.1	69.9		0		4.0		0		3.0		0		3.0		0		3.0		0		3.0
23	73.4	68.0		0		3.1		0		1.6		0		1.6		0		1.6		0		1.6
24	70.8	65.5		0		2.2		0		0.3		0		0.3		0		0.3		0		0.3

June	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWE	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		6.1		0		3.0		0		3.2		0		3.2		0		3.2
2	72.6	68.4		0		5.2		0		2.0		0		2.0		0		2.0		0		2.0
3	70.9	67.3		0		4.6		0		0.7		0		0.7		0		0.7		0		0.7
4	69.6	66.5		0		4.2		0		0.0		0		0.0		0		0.0		0		0.0
5	68.7	65.8		0		3.7		0		0.0		0		0.0		0		0.0		0		0.0
6	68.5	65.7		0		3.6		0		0.0		0		0.0		0		0.0		0		0.0
7	69.0	66.3		0		4.4		0		0.0		0		0.0		0		0.0		0		0.0
8	70.6	66.9		0		5.6		0		0.0		0		0.0		0		0.0		0		0.0
9	73.0	67.7		0		7.0		0		0.0		0		0.0		0		0.0		0		0.0
10	76.1	68.1		0		8.7		0		3.3		0		3.3		0		3.3		0		3.3
11	79.5	69.1		0		10.3		0		5.2		0		5.2		0		5.2		0		5.2
12	82.9	70.1		0		12.0		0		6.8		0		6.8		0		6.8		0		6.8
13	86.0	71.0		0		13.1		0		7.9		0		7.9		0		7.9		0		7.9
14	88.4	72.5		0		14.0		0		9.5		0		9.5		0		9.5		0		9.5
15	90.0	74.0		0		14.5		0		10.6		0		10.6		0		10.6		0		10.6
16	90.5	73.7		0		14.4		0		10.3		0		10.3		0		10.3		0		10.3
17	90.3	74.2		0		13.9		0		10.6		0		10.6		0		10.6		0		10.6
18	89.4	73.9		0		12.5		0		10.1		0		10.1		0		10.1		0		10.1
19	88.1	74.5		0		11.3		0		9.5		0		9.5		0		9.5		0		9.5
20	86.4	75.3		0		9.9		0		8.8		0		8.8		0		8.8		0		8.8
21	84.3	76.5		0		9.3		0		8.4		0		8.4		0		8.4		0		8.4
22	81.9	75.7		0		8.4		0		7.7		0		7.7		0		7.7		0		7.7
23	79.5	74.0		0		7.7		0		6.3		0		6.3		0		6.3		0		6.3
24	77.0	72.1		0		6.9		0		4.6		0		4.6		0		4.6		0		4.6

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	6.5	0	2.1	0	2.3	0	2.3	0	2.3
2	72.4	69.4	0	5.4	0	1.1	0	1.1	0	1.1	0	1.1
3	71.3	68.4	0	5.1	0	0.3	0	0.3	0	0.3	0	0.3
4	70.5	67.7	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
5	70.0	67.4	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	4.3	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	5.9	0	0.0	0	0.0	0	0.0	0	0.0
9	73.7	69.5	0	7.2	0	0.0	0	0.0	0	0.0	0	0.0
10	76.2	70.6	0	8.5	0	3.5	0	3.5	0	3.5	0	3.5
11	78.9	71.8	0	10.1	0	5.7	0	5.7	0	5.7	0	5.7
12	81.4	73.0	0	12.0	0	7.4	0	7.4	0	7.4	0	7.4
13	83.4	74.4	0	13.3	0	8.7	0	8.7	0	8.7	0	8.7
14	84.8	74.8	0	13.9	0	9.6	0	9.6	0	9.6	0	9.6
15	85.2	75.0	0	14.4	0	10.0	0	10.0	0	10.0	0	10.0
16	85.1	75.0	0	14.3	0	9.9	0	9.9	0	9.9	0	9.9
17	84.6	74.7	0	13.8	0	9.4	0	9.4	0	9.4	0	9.4
18	83.8	74.6	0	12.3	0	8.8	0	8.8	0	8.8	0	8.8
19	82.7	74.6	0	11.3	0	8.4	0	8.4	0	8.4	0	8.4
20	81.4	74.4	0	10.2	0	7.4	0	7.4	0	7.4	0	7.4
21	79.9	74.9	0	9.2	0	6.8	0	6.8	0	6.8	0	6.8
22	78.4	74.0	0	8.4	0	5.6	0	5.6	0	5.6	0	5.6
23	76.8	72.7	0	7.6	0	4.4	0	4.4	0	4.4	0	4.4
24	75.2	71.6	0	7.1	0	3.4	0	3.4	0	3.4	0	3.4

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	6.4	0	3.0	0	3.3	0	3.3	0	3.3
2	73.2	70.3	0	5.1	0	2.0	0	2.0	0	2.0	0	2.0
3	71.7	68.9	0	4.8	0	0.8	0	0.8	0	0.8	0	0.8
4	70.4	67.8	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
5	69.5	66.8	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
6	68.9	66.4	0	3.7	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	3.9	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	5.0	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	6.6	0	0.0	0	0.0	0	0.0	0	0.0
10	73.2	67.7	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
11	76.2	68.8	0	9.9	0	3.7	0	3.7	0	3.7	0	3.7
12	79.3	70.3	0	11.5	0	5.9	0	5.9	0	5.9	0	5.9
13	82.3	72.2	0	13.3	0	7.8	0	7.8	0	7.8	0	7.8
14	84.7	73.7	0	14.2	0	8.8	0	8.8	0	8.8	0	8.8
15	86.3	74.6	0	14.7	0	10.1	0	10.1	0	10.1	0	10.1
16	86.8	75.1	0	14.6	0	10.2	0	10.2	0	10.2	0	10.2
17	86.6	75.1	0	13.4	0	10.0	0	10.0	0	10.0	0	10.0
18	86.0	75.3	0	12.5	0	9.9	0	9.9	0	9.9	0	9.9
19	85.1	76.0	0	11.3	0	9.2	0	9.2	0	9.2	0	9.2
20	83.8	76.8	0	10.2	0	8.4	0	8.4	0	8.4	0	8.4
21	82.3	77.2	0	9.5	0	8.0	0	8.0	0	8.0	0	8.0
22	80.6	76.3	0	8.3	0	7.2	0	7.2	0	7.2	0	7.2
23	78.7	75.3	0	7.6	0	5.8	0	5.8	0	5.8	0	5.8
24	76.8	73.7	0	6.8	0	4.5	0	4.5	0	4.5	0	4.5

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADR	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	3.2	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.6	-7,100	0.0	-7,100	0.0	-7,100	0.0	-7,100	0.0
6	62.4	60.3	0	0.4	-11,283	0.0	-11,283	0.0	-11,283	0.0	-11,283	0.0
7	62.2	60.2	0	0.6	-13,289	0.0	-13,289	0.0	-13,289	0.0	-13,289	0.0
8	62.9	60.9	0	1.2	-11,454	0.0	-11,454	0.0	-11,454	0.0	-11,454	0.0
9	64.7	61.8	0	3.0	-4,908	0.0	-4,908	0.0	-4,908	0.0	-4,908	0.0
10	67.6	62.1	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	6.6	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	8.0	0	0.5	0	0.5	0	0.5	0	0.5
13	78.3	66.7	0	9.9	0	1.0	0	1.0	0	1.0	0	1.0
14	81.2	68.4	0	11.1	0	4.7	0	4.7	0	4.7	0	4.7
15	83.0	70.0	0	11.5	0	6.6	0	6.6	0	6.6	0	6.6
16	83.7	70.5	0	11.3	0	7.0	0	7.0	0	7.0	0	7.0
17	83.4	70.5	0	10.1	0	6.7	0	6.7	0	6.7	0	6.7
18	82.8	70.9	0	9.1	0	6.3	0	6.3	0	6.3	0	6.3
19	81.6	72.7	0	8.3	0	6.0	0	6.0	0	6.0	0	6.0
20	80.1	74.7	0	7.6	0	5.6	0	5.6	0	5.6	0	5.6
21	78.3	74.1	0	6.5	0	4.9	0	4.9	0	4.9	0	4.9
22	76.3	72.4	0	5.3	0	3.5	0	3.5	0	3.5	0	3.5
23	74.1	70.7	0	4.0	0	2.1	0	2.1	0	2.1	0	2.1
24	71.8	68.9	0	3.4	0	0.8	0	0.8	0	0.8	0	0.8

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADR	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	-20,729	0.0	-44,172	0.5	-56,390	0.0	-56,390	0.0	-56,390	0.0
2	50.1	48.6	-27,546	0.0	-53,151	0.4	-64,354	0.0	-64,354	0.0	-64,354	0.0
3	48.4	46.9	-32,352	0.1	-66,108	0.1	-68,920	0.1	-68,920	0.1	-68,920	0.1
4	47.1	45.8	-34,792	0.3	-72,155	0.1	-75,429	0.1	-75,429	0.1	-75,429	0.1
5	46.3	44.8	-40,489	0.0	-78,349	0.0	-80,996	0.0	-80,996	0.0	-80,996	0.0
6	46.0	44.5	-39,415	0.0	-84,351	0.0	-84,351	0.0	-84,351	0.0	-84,351	0.0
7	46.8	45.3	-35,219	0.0	-81,409	0.0	-81,409	0.0	-81,409	0.0	-81,409	0.0
8	48.9	47.5	-27,450	0.0	-73,810	0.0	-73,810	0.0	-73,810	0.0	-73,810	0.0
9	52.2	49.9	-17,890	0.0	-61,023	0.0	-61,023	0.0	-61,023	0.0	-61,023	0.0
10	56.2	52.5	-1,741	0.0	-44,916	0.0	-44,916	0.0	-44,916	0.0	-44,916	0.0
11	60.4	54.4	-445	0.0	-27,797	0.0	-27,797	0.0	-27,797	0.0	-27,797	0.0
12	64.4	56.0	0	0.4	-11,046	0.0	-11,046	0.0	-11,046	0.0	-11,046	0.0
13	67.7	57.3	0	0.7	-2,879	0.0	-2,879	0.0	-2,879	0.0	-2,879	0.0
14	69.8	58.2	0	1.7	-2,025	0.0	-2,025	0.0	-2,025	0.0	-2,025	0.0
15	70.6	58.1	0	4.3	-1,394	0.0	-1,394	0.0	-1,394	0.0	-1,394	0.0
16	70.3	57.5	0	4.2	-634	0.0	-634	0.0	-634	0.0	-634	0.0
17	69.5	57.3	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	0.3	-3,960	0.0	-3,960	0.0	-3,960	0.0	-3,960	0.0
21	62.1	59.4	0	0.0	-14,218	0.0	-14,218	0.0	-14,218	0.0	-14,218	0.0
22	59.6	57.3	-2,037	0.0	-24,879	0.0	-24,879	0.0	-24,879	0.0	-24,879	0.0
23	57.0	55.1	-11,571	0.0	-35,587	0.0	-35,587	0.0	-35,587	0.0	-35,587	0.0
24	54.5	52.7	-18,384	0.0	-45,978	0.0	-45,978	0.0	-45,978	0.0	-45,978	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-41,212	0.0	-44,534	0.5	-60,044	0.0	-60,044	0.0	-60,044	0.0
2	49.4	47.3	-47,222	0.0	-61,125	0.2	-70,645	0.0	-70,645	0.0	-70,645	0.0
3	47.2	45.3	-52,543	0.0	-72,486	0.1	-79,256	0.0	-79,256	0.0	-79,256	0.0
4	45.3	43.4	-56,529	0.0	-82,018	0.1	-86,317	0.0	-86,317	0.0	-86,317	0.0
5	43.9	42.2	-58,808	0.0	-88,715	0.1	-88,715	0.1	-88,715	0.1	-88,715	0.1
6	43.0	41.4	-57,447	0.0	-94,516	0.0	-94,516	0.0	-94,516	0.0	-94,516	0.0
7	42.7	41.2	-53,406	0.0	-97,093	0.0	-97,093	0.0	-97,093	0.0	-97,093	0.0
8	43.5	42.0	-44,614	0.0	-96,172	0.0	-96,172	0.0	-96,172	0.0	-96,172	0.0
9	45.9	44.0	-31,033	0.0	-86,674	0.0	-86,674	0.0	-86,674	0.0	-86,674	0.0
10	49.4	46.6	-14,505	0.0	-72,642	0.0	-72,642	0.0	-72,642	0.0	-72,642	0.0
11	53.8	48.6	-2,260	0.0	-54,738	0.0	-54,738	0.0	-54,738	0.0	-54,738	0.0
12	58.4	50.6	-1,025	0.0	-36,005	0.0	-36,005	0.0	-36,005	0.0	-36,005	0.0
13	62.8	52.6	0	0.7	-17,975	0.0	-17,975	0.0	-17,975	0.0	-17,975	0.0
14	66.3	54.5	0	0.8	-3,947	0.0	-3,947	0.0	-3,947	0.0	-3,947	0.0
15	68.7	55.7	0	1.7	-3,188	0.0	-3,188	0.0	-3,188	0.0	-3,188	0.0
16	69.5	56.1	0	3.4	-2,274	0.0	-2,274	0.0	-2,274	0.0	-2,274	0.0
17	69.2	55.8	0	2.8	-1,633	0.0	-1,633	0.0	-1,633	0.0	-1,633	0.0
18	68.3	57.0	0	1.6	-1,328	0.0	-1,328	0.0	-1,328	0.0	-1,328	0.0
19	66.9	59.4	0	0.5	-939	0.0	-939	0.0	-939	0.0	-939	0.0
20	65.0	59.4	0	0.0	-6,561	0.0	-6,561	0.0	-6,561	0.0	-6,561	0.0
21	62.8	58.2	-1,577	0.0	-16,157	0.0	-16,157	0.0	-16,157	0.0	-16,157	0.0
22	60.2	56.1	-14,008	0.0	-27,039	0.0	-27,039	0.0	-27,039	0.0	-27,039	0.0
23	57.5	54.0	-23,999	0.0	-38,191	0.0	-38,191	0.0	-38,191	0.0	-38,191	0.0
24	54.7	51.7	-30,856	0.1	-49,303	0.0	-49,303	0.0	-49,303	0.0	-49,303	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-61,792	0.0	-89,645	0.0	-90,673	0.0	-90,673	0.0	-90,673	0.0
2	43.2	41.1	-66,329	0.0	-96,041	0.0	-97,608	0.0	-97,608	0.0	-97,608	0.0
3	41.8	39.8	-69,986	0.0	-100,786	0.0	-103,284	0.0	-103,284	0.0	-103,284	0.0
4	40.7	38.7	-73,255	0.0	-105,739	0.0	-106,947	0.0	-106,947	0.0	-106,947	0.0
5	40.1	38.4	-75,063	0.0	-110,263	0.0	-110,263	0.0	-110,263	0.0	-110,263	0.0
6	39.9	38.4	-73,924	0.0	-112,361	0.0	-112,361	0.0	-112,361	0.0	-112,361	0.0
7	40.5	39.0	-70,601	0.0	-110,572	0.0	-110,572	0.0	-110,572	0.0	-110,572	0.0
8	42.2	40.7	-64,196	0.0	-104,433	0.0	-104,433	0.0	-104,433	0.0	-104,433	0.0
9	44.9	43.4	-54,364	0.0	-94,373	0.0	-94,373	0.0	-94,373	0.0	-94,373	0.0
10	48.2	45.8	-42,310	0.0	-81,796	0.0	-81,796	0.0	-81,796	0.0	-81,796	0.0
11	51.7	48.3	-27,027	0.0	-67,800	0.0	-67,800	0.0	-67,800	0.0	-67,800	0.0
12	55.0	50.7	-12,498	0.0	-53,972	0.0	-53,972	0.0	-53,972	0.0	-53,972	0.0
13	57.7	52.0	-2,882	0.0	-42,557	0.0	-42,557	0.0	-42,557	0.0	-42,557	0.0
14	59.5	52.6	-1,932	0.0	-34,399	0.0	-34,399	0.0	-34,399	0.0	-34,399	0.0
15	60.1	52.7	-943	0.0	-31,204	0.0	-31,204	0.0	-31,204	0.0	-31,204	0.0
16	59.9	52.6	-310	0.0	-30,992	0.0	-30,992	0.0	-30,992	0.0	-30,992	0.0
17	59.2	52.1	0	0.0	-33,252	0.0	-33,252	0.0	-33,252	0.0	-33,252	0.0
18	58.2	51.8	0	0.0	-36,607	0.0	-36,607	0.0	-36,607	0.0	-36,607	0.0
19	56.8	52.2	-9,632	0.0	-42,163	0.0	-42,163	0.0	-42,163	0.0	-42,163	0.0
20	55.0	51.4	-20,708	0.0	-49,516	0.0	-49,516	0.0	-49,516	0.0	-49,516	0.0
21	53.1	50.1	-29,305	0.2	-57,133	0.0	-57,133	0.0	-57,133	0.0	-57,133	0.0
22	51.0	48.1	-38,734	0.2	-65,832	0.0	-65,832	0.0	-65,832	0.0	-65,832	0.0
23	48.9	46.2	-48,654	0.0	-74,461	0.0	-74,461	0.0	-74,461	0.0	-74,461	0.0
24	46.9	44.1	-54,223	0.0	-82,536	0.0	-82,536	0.0	-82,536	0.0	-82,536	0.0

01 Card - Job Information

 Project: ENERGY STUDY OF HEATING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29604 (2 BUILDINGS)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TAI	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	EXCHANGE

-----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	STORE	384.25	10	3	0		14.5			

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	STORAGE AREA	39.75	11	3	0		14.5			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	Heating T'stat Location Flag	T'stat Location	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST			LIGHT30	NO
2		50					HTGCONST			LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				182			
2	1	YES				182			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	57.5	14		196	0			
1	2	49	14		196	90			
1	3	28.75	14		196	0			
1	4	39.75	14		196	90			
1	5	86.25	14		196	180			
2	1	11	14		196	180			
2	2	39.75	14		196	270			
2	3	11	14		196	0			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret.	Visible Air Transmittance	Inside Visible Reflectance
1	1	18	10	1	1.03	.82	3				
1	5	10.9	10	1	1.03	.82	3				

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						
2	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	111	PEOPLE	255	325	1.5	WATT-SF	ASHRAE2				
2			315	435	1.5	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Misc Equipment Descrio	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS	134	KW	FGHEAT						
1	2	GAS	35	MBH	FGHEAT						

-----CARD 29--- Room Airflows -----

-----Ventilation-----					-----Infiltration-----				--Reheat Minimum--	
Room Number	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
1	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2			15	CFM-P			.1	CFM-SF		

-----CARD 30- Fan Airflows -----

-----Main-----					-----Auxiliary-----					--Room Exhaust--	
Room Number	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units	Units
1	Value	Units	Value	Units	Value	Units	Value	Units			
1	1	CFM-SF	1	CFM-SF							
2			1	CFM-SF							

-----CARD 33-- External Shading -----

-----OVERHANG-----				-----VERTICAL FINS-----						
Shading Type	Glass Height	Height Above Glass	Projection Out	Glass Width	Projection Left	Projection Out	Projection Right	Projection Out	Right Projection	Adjacent Building Flag
3	6	3.25	3							

Number	Description
1	MULTI-ZONE SYSTEMS

System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	MZ						
2	UH						

[illegible][illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

MZ (Utility file not found)
UH (Utility file not found)

Schedule Name: CLGCONST

Project: SAMPLE HEATING TSTAT SCHEDULE

Location: SAMPLE

Client:

Program User:

Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

----	-----
0	75
24	

Schedule Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		100
24		

```
*****  
*****  
**                                     **  
**          TRACE    600    ANALYSIS          **  
**                                     **  
**          by          **  
**                                     **  
*****  
*****
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FORT GORDON ENERGY STUDY
AUGUSTA, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29605 (2 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 14: 0:24 8/15/94
Dataset Name: FGTYP58 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==> Mo/Hr: 8/16 * Mo/Hr: 6/17 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 96/ 76/105.0 * OADB: 98 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Percent		Space	Percent		Space Peak	Coil Peak	Percent
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	14,543	0		14,543	13.36	*	15,581	32.36	*	-8,337	-8,337	9.87
Glass Solar	13,680	0		13,680	17.27	*	13,984	29.04	*	0	0	0.00
Glass Cond	6,106	0		6,106	7.71	*	6,920	14.37	*	-15,406	-15,406	18.23
Wall Cond	4,546	0		4,546	5.74	*	5,173	10.74	*	-11,301	-11,301	13.38
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	10,973			10,973	13.86	*	6,495	13.49	*	-15,748	-15,748	18.64
Sub Total==>	49,848	0		49,848	62.94	*	48,153	100.00	*	-50,792	-50,792	60.12
Internal Loads												
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	29,352	37.06	*	0	0.00	*	0	-33,699	39.88
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	49,848	0	0	79,200	100.00	*	48,153	100.00	*	-50,792	-84,491	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	
Main Clg	6.6	79.2	60.6	3,644	78.9	67.1	81.6	63.1	60.6	75.7	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	3,643
Totals	6.6	79.2									Wall	3,154

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA		Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F								
Main Htg	-70.6	3,644	63.1	80.6	Vent	675	675	Clg Cfm/Sqft	1.00	SADB	63.1	80.6
Aux Htg	0.0	0	0.0	0.0	Infil	252	315	Clg Cfm/Ton	552.05	Plenum	75.0	68.0
Preheat	-13.8	3,644	59.7	63.1	Supply	3,644	3,644	Clg Sqft/Ton	552.05	Return	75.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Sqft	21.74	Ret/OA	78.9	59.7
Humidif	0.0	0	0.0	0.0	Return	3,644	3,644	No. People	45	Runarnd	75.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	675	675	Htg % OA	18.5	Fn MtrTD	0.0	0.0
Total	-84.5				Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
					Auxil	0	0	Htg Btuh/SqFt	-23.19	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-42,508	0.0	-56,057	0.0	-54,696	0.0	-54,690	0.0	-54,690	0.0
2	32.9	30.7	-43,393	0.0	-56,348	0.0	-55,262	0.0	-55,257	0.0	-55,257	0.0
3	33.1	31.3	-44,203	0.0	-55,497	0.0	-54,629	0.0	-54,625	0.0	-54,625	0.0
4	33.9	32.1	-44,687	0.0	-53,712	0.0	-53,019	0.0	-53,016	0.0	-53,016	0.0
5	35.2	33.5	-44,854	0.0	-51,229	0.0	-50,675	0.0	-50,673	0.0	-50,673	0.0
6	37.0	35.4	-43,727	0.0	-48,103	0.0	-47,661	0.0	-47,659	0.0	-47,659	0.0
7	39.0	37.6	-41,640	0.0	-44,820	0.0	-44,467	0.0	-44,465	0.0	-44,465	0.0
8	41.3	40.1	-38,250	0.0	-41,136	0.0	-40,854	0.0	-40,853	0.0	-40,853	0.0
9	43.7	42.5	-33,204	0.0	-37,294	0.0	-37,069	0.0	-37,068	0.0	-37,068	0.0
10	46.1	44.0	-26,955	0.0	-33,406	0.0	-33,226	0.0	-33,225	0.0	-33,225	0.0
11	48.4	45.0	-19,632	0.0	-29,542	0.0	-29,399	0.0	-29,398	0.0	-29,398	0.0
12	50.5	45.6	-12,401	0.0	-25,860	0.0	-25,746	0.0	-25,746	0.0	-25,746	0.0
13	52.2	46.1	-6,669	0.0	-22,789	0.0	-22,699	0.0	-22,698	0.0	-22,698	0.0
14	53.5	46.4	-2,480	0.0	-20,255	0.0	-20,183	0.0	-20,183	0.0	-20,183	0.0
15	54.3	46.3	0	0.0	-18,536	0.0	-18,478	0.0	-18,478	0.0	-18,478	0.0
16	54.6	46.1	0	0.0	-17,677	0.0	-17,631	0.0	-17,631	0.0	-17,631	0.0
17	54.0	45.9	-1,587	0.0	-18,488	0.0	-18,452	0.0	-18,452	0.0	-18,452	0.0
18	52.5	45.0	-5,438	0.0	-21,126	0.0	-21,097	0.0	-21,096	0.0	-21,096	0.0
19	50.1	44.8	-10,693	0.0	-25,558	0.0	-25,535	0.0	-25,535	0.0	-25,535	0.0
20	47.1	43.3	-16,280	0.0	-31,072	0.0	-31,054	0.0	-31,054	0.0	-31,054	0.0
21	43.7	40.4	-21,219	0.0	-37,213	0.0	-37,198	0.0	-37,198	0.0	-37,198	0.0
22	40.4	37.3	-25,835	0.0	-43,054	0.0	-43,043	0.0	-43,043	0.0	-43,043	0.0
23	37.3	34.9	-29,501	0.0	-48,389	0.0	-48,379	0.0	-48,379	0.0	-48,379	0.0
24	34.9	32.6	-32,358	0.0	-52,341	0.0	-52,333	0.0	-52,333	0.0	-52,333	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-31,747	0.0	-39,783	0.0	-41,449	0.0	-41,457	0.0	-41,457	0.0
2	39.7	37.1	-34,293	0.0	-43,644	0.0	-44,973	0.0	-44,979	0.0	-44,979	0.0
3	37.8	35.1	-36,394	0.0	-47,155	0.0	-48,216	0.0	-48,220	0.0	-48,220	0.0
4	36.3	33.8	-38,058	0.0	-49,828	0.0	-50,675	0.0	-50,678	0.0	-50,678	0.0
5	35.1	32.6	-38,980	0.0	-51,942	0.0	-52,618	0.0	-52,621	0.0	-52,621	0.0
6	34.4	32.0	-38,777	0.0	-53,176	0.0	-53,715	0.0	-53,718	0.0	-53,718	0.0
7	34.1	31.9	-37,464	0.0	-53,691	0.0	-54,122	0.0	-54,124	0.0	-54,124	0.0
8	34.6	32.4	-34,680	0.0	-52,764	0.0	-53,108	0.0	-53,109	0.0	-53,109	0.0
9	36.0	33.8	-30,445	0.0	-50,145	0.0	-50,420	0.0	-50,421	0.0	-50,421	0.0
10	38.2	34.7	-24,910	0.0	-46,047	0.0	-46,265	0.0	-46,266	0.0	-46,266	0.0
11	40.9	36.2	-18,413	0.0	-41,096	0.0	-41,270	0.0	-41,271	0.0	-41,271	0.0
12	43.9	37.4	-11,975	0.0	-35,617	0.0	-35,756	0.0	-35,756	0.0	-35,756	0.0
13	46.9	39.4	-6,617	0.0	-30,055	0.0	-30,164	0.0	-30,165	0.0	-30,165	0.0
14	49.7	41.4	-2,781	0.0	-24,779	0.0	-24,866	0.0	-24,867	0.0	-24,867	0.0
15	51.8	42.8	-460	0.0	-20,787	0.0	-20,856	0.0	-20,856	0.0	-20,856	0.0
16	53.2	43.9	0	0.0	-18,166	0.0	-18,221	0.0	-18,221	0.0	-18,221	0.0
17	53.7	44.2	-1,473	0.0	-17,317	0.0	-17,360	0.0	-17,361	0.0	-17,361	0.0
18	53.4	44.4	-4,705	0.0	-17,962	0.0	-17,996	0.0	-17,997	0.0	-17,997	0.0
19	52.7	44.4	-9,109	0.0	-19,536	0.0	-19,563	0.0	-19,563	0.0	-19,563	0.0
20	51.5	45.2	-14,283	0.0	-22,247	0.0	-22,269	0.0	-22,269	0.0	-22,269	0.0
21	50.0	44.6	-18,810	0.0	-25,501	0.0	-25,519	0.0	-25,519	0.0	-25,519	0.0
22	48.1	43.3	-23,216	0.0	-29,393	0.0	-29,407	0.0	-29,407	0.0	-29,407	0.0
23	46.1	41.8	-26,663	0.0	-33,312	0.0	-33,323	0.0	-33,323	0.0	-33,323	0.0
24	43.9	40.1	-29,574	0.0	-37,436	0.0	-37,445	0.0	-37,445	0.0	-37,445	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.2	46.8	-14,576	0.0	-16,228	0.0	-23,149	0.0	-23,244	0.0	-23,246	0.0
2	48.7	44.6	-17,025	0.0	-22,773	0.0	-28,062	0.0	-28,138	0.0	-28,139	0.0
3	46.6	42.9	-18,934	0.0	-27,659	0.0	-31,877	0.0	-31,938	0.0	-31,939	0.0
4	44.9	41.4	-20,667	0.0	-31,497	0.0	-34,863	0.0	-34,912	0.0	-34,913	0.0
5	43.9	40.8	-21,347	0.0	-33,818	0.0	-36,505	0.0	-36,543	0.0	-36,544	0.0
6	43.5	40.8	-20,780	0.0	-34,928	0.0	-37,073	0.0	-37,104	0.0	-37,104	0.0
7	44.0	41.4	-19,005	0.0	-34,370	0.0	-36,083	0.0	-36,108	0.0	-36,108	0.0
8	45.4	42.7	-15,352	0.0	-32,143	0.0	-33,511	0.0	-33,530	0.0	-33,531	0.0
9	47.7	44.3	-9,814	0.0	-28,258	0.0	-29,350	0.0	-29,366	0.0	-29,366	0.0
10	50.6	45.8	-2,896	0.0	-23,245	0.0	-24,116	0.0	-24,129	0.0	-24,129	0.0
11	53.9	47.4	0	0.0	-17,343	0.0	-18,037	0.0	-18,047	0.0	-18,047	0.0
12	57.4	49.0	0	0.0	-10,880	0.0	-11,433	0.0	-11,441	0.0	-11,441	0.0
13	60.7	50.8	0	0.0	-4,753	0.0	-5,192	0.0	-5,198	0.0	-5,199	0.0
14	63.6	52.7	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	-5,141	0.0	-5,330	0.0	-5,333	0.0	-5,333	0.0
23	57.1	51.9	0	0.0	-11,450	0.0	-11,601	0.0	-11,603	0.0	-11,603	0.0
24	54.2	49.4	-3,085	0.0	-17,434	0.0	-17,554	0.0	-17,555	0.0	-17,555	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	-532	0.0	-532	0.0	-532	0.0
3	57.0	53.5	0	0.0	-3,963	0.0	-6,024	0.0	-6,024	0.0	-6,024	0.0
4	55.4	52.4	-1,801	0.0	-8,811	0.0	-10,459	0.0	-10,459	0.0	-10,459	0.0
5	54.2	51.4	-2,847	0.0	-12,493	0.0	-13,811	0.0	-13,811	0.0	-13,811	0.0
6	53.5	50.9	-2,413	0.0	-14,922	0.0	-15,976	0.0	-15,976	0.0	-15,976	0.0
7	53.2	51.1	-859	0.0	-16,358	0.0	-17,201	0.0	-17,201	0.0	-17,201	0.0
8	52.9	51.5	0	0.0	-15,754	0.0	-16,428	0.0	-16,428	0.0	-16,428	0.0
9	55.9	52.1	0	0.0	-12,632	0.0	-13,170	0.0	-13,170	0.0	-13,170	0.0
10	58.9	53.2	0	0.0	-7,529	0.0	-7,959	0.0	-7,959	0.0	-7,959	0.0
11	62.6	55.2	0	0.0	-955	0.0	-1,298	0.0	-1,298	0.0	-1,298	0.0
12	66.5	57.3	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	3.2	0	0.2	0	0.2	0	0.2	0	0.2
16	75.9	62.2	0	3.4	0	0.2	0	0.2	0	0.2	0	0.2
17	75.6	62.0	0	3.2	0	0.1	0	0.1	0	0.1	0	0.1
18	74.9	61.7	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
19	73.7	62.0	0	2.1	0	0.1	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	1.4	0	0.3	0	0.3	0	0.3	0	0.3
21	70.2	63.3	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
22	68.0	62.5	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

May		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
2	65.7	61.5	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
3	63.6	59.7	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
4	61.8	58.4	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
5	60.5	57.1	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
6	59.7	56.5	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
7	59.4	56.5	0	0.0		0.0	-2,686	0.0		0.0	-2,686	0.0		0.0	-2,686	0.0		0.0	-2,686	0.0		0.0
8	60.1	56.3	0	0.0		0.0	-2,707	0.0		0.0	-2,707	0.0		0.0	-2,707	0.0		0.0	-2,707	0.0		0.0
9	62.4	56.3	0	0.7		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
10	65.7	57.2	0	1.7		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
11	69.9	58.9	0	2.4		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
12	74.3	60.9	0	3.1		0.0	0	0.1		0.1	0	0.1		0.1	0	0.1		0.1	0	0.1		0.1
13	78.5	63.7	0	3.7		0.0	0	0.4		0.4	0	0.4		0.4	0	0.4		0.4	0	0.4		0.4
14	81.9	65.3	0	4.1		0.0	0	0.5		0.5	0	0.5		0.5	0	0.5		0.5	0	0.5		0.5
15	84.1	66.9	0	4.5		0.0	0	0.6		0.6	0	0.6		0.6	0	0.6		0.6	0	0.6		0.6
16	84.9	67.1	0	4.6		0.0	0	2.5		2.5	0	2.5		2.5	0	2.5		2.5	0	2.5		2.5
17	84.6	67.3	0	4.5		0.0	0	2.6		2.6	0	2.6		2.6	0	2.6		2.6	0	2.6		2.6
18	83.8	67.1	0	4.1		0.0	0	2.6		2.6	0	2.6		2.6	0	2.6		2.6	0	2.6		2.6
19	82.4	67.5	0	3.5		0.0	0	2.3		2.3	0	2.3		2.3	0	2.3		2.3	0	2.3		2.3
20	80.6	68.9	0	2.7		0.0	0	1.9		1.9	0	1.9		1.9	0	1.9		1.9	0	1.9		1.9
21	78.5	71.0	0	2.0		0.0	0	1.7		1.7	0	1.7		1.7	0	1.7		1.7	0	1.7		1.7
22	76.1	69.9	0	1.6		0.0	0	1.2		1.2	0	1.2		1.2	0	1.2		1.2	0	1.2		1.2
23	73.4	68.0	0	1.1		0.0	0	0.6		0.6	0	0.6		0.6	0	0.6		0.6	0	0.6		0.6
24	70.8	65.5	0	0.8		0.0	0	0.1		0.1	0	0.1		0.1	0	0.1		0.1	0	0.1		0.1

June	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton		
1	74.7	70.1			0	2.4			0	1.0			0	1.2			0	1.2		
2	72.6	68.4			0	1.9			0	0.6			0	0.6			0	0.6		
3	70.9	67.3			0	1.7			0	0.2			0	0.2			0	0.2		
4	69.6	66.5			0	1.5			0	0.0			0	0.0			0	0.0		
5	68.7	65.8			0	1.4			0	0.0			0	0.0			0	0.0		
6	68.5	65.7			0	1.4			0	0.0			0	0.0			0	0.0		
7	69.0	66.3			0	1.8			0	0.0			0	0.0			0	0.0		
8	70.6	66.9			0	2.3			0	0.0			0	0.0			0	0.0		
9	73.0	67.7			0	3.0			0	0.0			0	0.0			0	0.0		
10	76.1	68.1			0	3.7			0	1.2			0	1.2			0	1.2		
11	79.5	69.1			0	4.4			0	2.2			0	2.2			0	2.2		
12	82.9	70.1			0	5.0			0	2.8			0	2.8			0	2.8		
13	86.0	71.0			0	5.5			0	3.3			0	3.3			0	3.3		
14	88.4	72.5			0	5.9			0	4.1			0	4.1			0	4.1		
15	90.0	74.0			0	6.3			0	4.8			0	4.8			0	4.8		
16	90.5	73.7			0	6.4			0	4.7			0	4.7			0	4.7		
17	90.3	74.2			0	6.3			0	4.8			0	4.8			0	4.8		
18	89.4	73.9			0	5.8			0	4.7			0	4.7			0	4.7		
19	88.1	74.5			0	5.2			0	4.3			0	4.3			0	4.3		
20	86.4	75.3			0	4.4			0	3.7			0	3.7			0	3.7		
21	84.3	76.5			0	3.9			0	3.4			0	3.4			0	3.4		
22	81.9	75.7			0	3.4			0	3.1			0	3.1			0	3.1		
23	79.5	74.0			0	3.0			0	2.4			0	2.4			0	2.4		
24	77.0	72.1			0	2.6			0	1.8			0	1.8			0	1.8		

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

July			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5			0	2.7			0	0.7			0	0.8			0	0.8			0	0.8
2	72.4	69.4			0	2.1			0	0.3			0	0.4			0	0.4			0	0.4
3	71.3	68.4			0	1.9			0	0.1			0	0.1			0	0.1			0	0.1
4	70.5	67.7			0	1.8			0	0.0			0	0.0			0	0.0			0	0.0
5	70.0	67.4			0	1.7			0	0.0			0	0.0			0	0.0			0	0.0
6	69.9	67.5			0	1.7			0	0.0			0	0.0			0	0.0			0	0.0
7	70.3	68.0			0	2.0			0	0.0			0	0.0			0	0.0			0	0.0
8	71.7	69.0			0	2.5			0	0.0			0	0.0			0	0.0			0	0.0
9	73.7	69.5			0	3.0			0	0.0			0	0.0			0	0.0			0	0.0
10	76.2	70.6			0	3.6			0	1.4			0	1.4			0	1.4			0	1.4
11	78.9	71.8			0	4.2			0	2.5			0	2.5			0	2.5			0	2.5
12	81.4	73.0			0	5.0			0	3.1			0	3.1			0	3.1			0	3.1
13	83.4	74.4			0	5.5			0	3.6			0	3.6			0	3.6			0	3.6
14	84.8	74.8			0	5.8			0	4.0			0	4.0			0	4.0			0	4.0
15	85.2	75.0			0	6.2			0	4.4			0	4.4			0	4.4			0	4.4
16	85.1	75.0			0	6.3			0	4.4			0	4.4			0	4.4			0	4.4
17	84.6	74.7			0	6.3			0	4.3			0	4.3			0	4.3			0	4.3
18	83.8	74.6			0	5.8			0	4.1			0	4.1			0	4.1			0	4.1
19	82.7	74.6			0	5.2			0	3.8			0	3.8			0	3.8			0	3.8
20	81.4	74.4			0	4.5			0	3.3			0	3.3			0	3.3			0	3.3
21	79.9	74.9			0	3.9			0	2.9			0	2.9			0	2.9			0	2.9
22	78.4	74.0			0	3.4			0	2.3			0	2.3			0	2.3			0	2.3
23	76.8	72.7			0	3.0			0	1.7			0	1.7			0	1.7			0	1.7
24	75.2	71.6			0	2.8			0	1.3			0	1.3			0	1.3			0	1.3

August			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0			0	2.7			0	0.9			0	1.2			0	1.2			0	1.2
2	73.2	70.3			0	2.0			0	0.6			0	0.6			0	0.6			0	0.6
3	71.7	68.9			0	1.8			0	0.3			0	0.3			0	0.3			0	0.3
4	70.4	67.8			0	1.6			0	0.0			0	0.0			0	0.0			0	0.0
5	69.5	66.8			0	1.5			0	0.0			0	0.0			0	0.0			0	0.0
6	68.9	66.4			0	1.4			0	0.0			0	0.0			0	0.0			0	0.0
7	68.7	66.4			0	1.6			0	0.0			0	0.0			0	0.0			0	0.0
8	69.2	66.8			0	2.1			0	0.0			0	0.0			0	0.0			0	0.0
9	70.8	67.7			0	2.8			0	0.0			0	0.0			0	0.0			0	0.0
10	73.2	67.7			0	3.5			0	0.0			0	0.0			0	0.0			0	0.0
11	76.2	68.8			0	4.2			0	1.4			0	1.4			0	1.4			0	1.4
12	79.3	70.3			0	4.8			0	2.6			0	2.6			0	2.6			0	2.6
13	82.3	72.2			0	5.5			0	3.1			0	3.1			0	3.1			0	3.1
14	84.7	73.7			0	6.0			0	3.7			0	3.7			0	3.7			0	3.7
15	86.3	74.6			0	6.4			0	4.4			0	4.4			0	4.4			0	4.4
16	86.8	75.1			0	6.5			0	4.6			0	4.6			0	4.6			0	4.6
17	86.6	75.1			0	6.1			0	4.6			0	4.6			0	4.6			0	4.6
18	86.0	75.3			0	5.7			0	4.6			0	4.6			0	4.6			0	4.6
19	85.1	76.0			0	5.1			0	4.1			0	4.1			0	4.1			0	4.1
20	83.8	76.8			0	4.3			0	3.7			0	3.7			0	3.7			0	3.7
21	82.3	77.2			0	3.9			0	3.4			0	3.4			0	3.4			0	3.4
22	80.6	76.3			0	3.4			0	2.9			0	2.9			0	2.9			0	2.9
23	78.7	75.3			0	2.9			0	2.3			0	2.3			0	2.3			0	2.3
24	76.8	73.7			0	2.6			0	1.8			0	1.8			0	1.8			0	1.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	2.9	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	3.5	0	0.2	0	0.2	0	0.2	0	0.2
13	78.3	66.7	0	4.2	0	0.4	0	0.4	0	0.4	0	0.4
14	81.2	68.4	0	4.8	0	0.5	0	0.5	0	0.5	0	0.5
15	83.0	70.0	0	5.2	0	2.8	0	2.8	0	2.8	0	2.8
16	83.7	70.5	0	5.2	0	3.3	0	3.3	0	3.3	0	3.3
17	83.4	70.5	0	4.9	0	3.2	0	3.2	0	3.2	0	3.2
18	82.8	70.9	0	4.3	0	3.1	0	3.1	0	3.1	0	3.1
19	81.6	72.7	0	3.6	0	2.7	0	2.7	0	2.7	0	2.7
20	80.1	74.7	0	3.1	0	2.5	0	2.5	0	2.5	0	2.5
21	78.3	74.1	0	2.7	0	2.0	0	2.0	0	2.0	0	2.0
22	76.3	72.4	0	2.0	0	1.5	0	1.5	0	1.5	0	1.5
23	74.1	70.7	0	1.5	0	0.9	0	0.9	0	0.9	0	0.9
24	71.8	68.9	0	1.1	0	0.3	0	0.3	0	0.3	0	0.3

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-13,275	0.0	-19,057	0.0	-19,161	0.0	-19,163	0.0
2	50.1	48.6	-939	0.0	-17,820	0.1	-23,211	0.0	-23,294	0.0	-23,296	0.0
3	48.4	46.9	-5,474	0.0	-22,194	0.1	-26,473	0.0	-26,539	0.0	-26,541	0.0
4	47.1	45.8	-8,958	0.0	-26,361	0.0	-28,931	0.0	-28,984	0.0	-28,985	0.0
5	46.3	44.8	-11,313	0.0	-28,432	0.0	-30,487	0.0	-30,530	0.0	-30,531	0.0
6	46.0	44.5	-11,911	0.0	-29,558	0.0	-31,201	0.0	-31,235	0.0	-31,236	0.0
7	46.8	45.3	-10,870	0.0	-28,639	0.0	-29,953	0.0	-29,980	0.0	-29,980	0.0
8	48.9	47.5	-7,915	0.0	-25,295	0.0	-26,344	0.0	-26,366	0.0	-26,367	0.0
9	52.2	49.9	-2,695	0.0	-19,751	0.0	-20,590	0.0	-20,607	0.0	-20,608	0.0
10	56.2	52.5	0	0.0	-12,914	0.0	-13,584	0.0	-13,598	0.0	-13,598	0.0
11	60.4	54.4	0	0.0	-5,580	0.0	-6,114	0.0	-6,125	0.0	-6,125	0.0
12	64.4	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	-2,922	0.0	-3,124	0.0	-3,129	0.0	-3,129	0.0
23	57.0	55.1	0	0.0	-8,926	0.0	-9,088	0.0	-9,091	0.0	-9,091	0.0
24	54.5	52.7	0	0.0	-14,340	0.0	-14,469	0.0	-14,472	0.0	-14,472	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

November		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OA08 OA0B	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0 49.2	-12,863	0.0	-15,641	0.0	-21,874	0.0	-21,962	0.0	-21,963	0.0
2	49.4 47.3	-16,077	0.0	-21,935	0.0	-26,607	0.0	-26,678	0.0	-26,679	0.0
3	47.2 45.3	-18,829	0.0	-26,738	0.0	-30,475	0.0	-30,532	0.0	-30,532	0.0
4	45.3 43.4	-20,950	0.0	-30,729	0.0	-33,717	0.0	-33,762	0.0	-33,763	0.0
5	43.9 42.2	-22,063	0.0	-33,622	0.0	-36,012	0.0	-36,048	0.0	-36,048	0.0
6	43.0 41.4	-21,482	0.0	-35,514	0.0	-37,425	0.0	-37,454	0.0	-37,454	0.0
7	42.7 41.2	-19,664	0.0	-36,287	0.0	-37,815	0.0	-37,838	0.0	-37,839	0.0
8	43.5 42.0	-15,828	0.0	-35,047	0.0	-36,269	0.0	-36,287	0.0	-36,288	0.0
9	45.9 44.0	-9,762	0.0	-30,843	0.0	-31,820	0.0	-31,835	0.0	-31,835	0.0
10	49.4 46.6	-2,406	0.0	-24,583	0.0	-25,364	0.0	-25,376	0.0	-25,376	0.0
11	53.8 48.6	0	0.0	-16,699	0.0	-17,322	0.0	-17,332	0.0	-17,332	0.0
12	58.4 50.6	0	0.0	-8,532	0.0	-9,029	0.0	-9,037	0.0	-9,037	0.0
13	62.8 52.6	0	0.0	-825	0.0	-1,220	0.0	-1,226	0.0	-1,226	0.0
14	66.3 54.5	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7 55.7	0	0.3	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5 56.1	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2 55.8	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3 57.0	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9 59.4	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0 59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8 58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2 56.1	0	0.0	-5,351	0.0	-5,523	0.0	-5,526	0.0	-5,526	0.0
23	57.5 54.0	0	0.0	-11,137	0.0	-11,275	0.0	-11,277	0.0	-11,277	0.0
24	54.7 51.7	-4,879	0.0	-16,739	0.0	-16,850	0.0	-16,851	0.0	-16,851	0.0

December		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OA08 OA0B	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9 42.5	-22,434	0.0	-34,008	0.0	-35,490	0.0	-35,496	0.0	-35,496	0.0
2	43.2 41.1	-24,748	0.0	-37,219	0.0	-38,402	0.0	-38,407	0.0	-38,407	0.0
3	41.8 39.8	-26,649	0.0	-39,807	0.0	-40,752	0.0	-40,756	0.0	-40,756	0.0
4	40.7 38.7	-28,183	0.0	-41,756	0.0	-42,511	0.0	-42,514	0.0	-42,514	0.0
5	40.1 38.4	-29,125	0.0	-42,755	0.0	-43,358	0.0	-43,361	0.0	-43,361	0.0
6	39.9 38.4	-28,593	0.0	-43,101	0.0	-43,583	0.0	-43,585	0.0	-43,585	0.0
7	40.5 39.0	-27,206	0.0	-42,093	0.0	-42,478	0.0	-42,480	0.0	-42,480	0.0
8	42.2 40.7	-24,393	0.0	-39,205	0.0	-39,512	0.0	-39,514	0.0	-39,514	0.0
9	44.9 43.4	-19,949	0.0	-34,535	0.0	-34,781	0.0	-34,782	0.0	-34,782	0.0
10	48.2 45.8	-14,373	0.0	-28,757	0.0	-28,953	0.0	-28,954	0.0	-28,954	0.0
11	51.7 48.3	-7,496	0.0	-22,592	0.0	-22,749	0.0	-22,749	0.0	-22,749	0.0
12	55.0 50.7	-901	0.0	-16,696	0.0	-16,820	0.0	-16,821	0.0	-16,821	0.0
13	57.7 52.0	0	0.0	-11,810	0.0	-11,910	0.0	-11,910	0.0	-11,910	0.0
14	59.5 52.6	0	0.0	-8,484	0.0	-8,563	0.0	-8,563	0.0	-8,563	0.0
15	60.1 52.7	0	0.0	-7,294	0.0	-7,357	0.0	-7,358	0.0	-7,358	0.0
16	59.9 52.6	0	0.0	-7,455	0.0	-7,505	0.0	-7,505	0.0	-7,505	0.0
17	59.2 52.1	0	0.0	-8,519	0.0	-8,559	0.0	-8,559	0.0	-8,559	0.0
18	58.2 51.8	0	0.0	-10,402	0.0	-10,434	0.0	-10,434	0.0	-10,434	0.0
19	56.8 52.2	0	0.0	-13,252	0.0	-13,277	0.0	-13,278	0.0	-13,278	0.0
20	55.0 51.4	-504	0.0	-16,881	0.0	-16,901	0.0	-16,901	0.0	-16,901	0.0
21	53.1 50.1	-6,325	0.0	-20,613	0.0	-20,629	0.0	-20,629	0.0	-20,629	0.0
22	51.0 48.1	-11,317	0.0	-24,587	0.0	-24,600	0.0	-24,600	0.0	-24,600	0.0
23	48.9 46.2	-15,376	0.0	-28,454	0.0	-28,465	0.0	-28,465	0.0	-28,465	0.0
24	46.9 44.1	-18,544	0.0	-32,016	0.0	-32,025	0.0	-32,025	0.0	-32,025	0.0

01 Card - Job Information

Project: FORT GORDON ENERGY STUDY
Location: AUGUSTA, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 29605 (2 BUILDINGS)

-----CARD 08-- Climatic Information -----
Weather Summer Winter Summer Summer Winter Summer Winter
Clearness Clearness Design Design Design Building Ground Ground
Code Number Number Dry Bulb Wet Bulb Dry Bulb Orientation Reflect Reflect
AUGUSTA

-----CARD 09-- Load Simulation Periods-----
1st Month Last Month Peak 1st Month Last Month 1st Month Last Month
Cooling Cooling Cooling Summer Summer Daylight Daylight
Simulation Simulation Load Hr Period Period Savings Savings
APR OCT

-----CARD 10 -- Load Simulation Parameters-----
Cooling Heating Airflow Airflow Room Put Wall
Load Load Ventilation Input Output Circulation RA Load
Method Method Method Units Units Rate to Room
CLTD-CLF TETD-TA1 OAHIGH ACTUAL ACTUAL MED-RCR NO

----- Load Section Alternative #1 -----

---- Load Alternative ----
Number Description
1 DISPENSARY

-----CARD 20-- General Room Parameters -----
Zone
Room Reference Room Floor Floor Const Plenum Acoustic Floor to Duplicate Duplicate Perimeter
Number Number Descrip Length Width Type Height Ceiling Floor Floors Rooms per
1 1 BLOCK 86.75 42 2 0 12 Multiplier Zone Depth

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	Heating T'stat Location Flag	T'stat Location	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST			LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				197			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	86.75	12.25		14	0			
1	2	42	12.25		14	90			
1	3	86.75	12.25		14	180			
1	4	42	12.25		14	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret.	Visible Transmittance	Inside Visible Reflectance
1	1	3.25	2.5	12	1.03	.82	3				
1	2	3.2	10	1	1.03	.82					
1	3	3.25	2.5	12	1.03	.82	3				
1	4	3.5	5.5	4	1.03	.82					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	45	PEOPLE	255	325	2	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS	41	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	Ventilation		Infiltration		Reheat Minimum	
	Cooling Value	Heating Units	Cooling Value	Heating Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF

-----CARD 30- Fan Airflows -----

Room Number	Main		Auxiliary		Room Exhaust	
	Cooling Value	Heating Units	Cooling Value	Heating Units	Value	Units
1	1	CFM-SF	1	CFM-SF		

-----CARD 33-- External Shading -----

Shading Type	Glass Height	OVERHANG		VERTICAL FINS				Adjacent Building Flag
		Projection Above Glass	Projection Out	Left Projection Out	Right Projection Right	Right Projection Out		
3	6.5	7.5	5.5					

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	MULTI-ZONE SYSTEMS

-----CARD 40--- System Type -----

System Set Number	System Type	OPTIONAL VENTILATION SYSTEM					Fan Static Pressure
		Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	
1	MZ						

System

-----CARD 42--- Fan SP and Duct Parameters

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

FGHEAT SCHD FOR HEAT LOAD CALCS

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

YES AVAILABLE (100%)

System:

MZ (Utility file not found)

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHO FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		0
24		

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		0
24		

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	


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*****  
*****  
**                                     **  
**          T R A C E    6 0 0    A N A L Y S I S          **  
**                                     **  
**          by              **  
**                                     **  
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ENERGY STUDY OF HEATING PLANT
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
80N
BUILDING 29607 (3 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 13:19: 2 8/19/94
Dataset Name: FGTYP59 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==) Mo/Hr: 8/16 * Mo/Hr: 6/18 * Mo/Hr: 13/ 1
 Outside Air ==) OADB/WB/HR: 96/ 76/105.0 * OADB: 96 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Percent		Space	Percent	Space Peak	Coil Peak	Percent
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)	(Btuh)	(Btuh)	(%)
Envelope Loads											
Skylite Solr	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Skylite Cond	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Roof Cond	60,869	0	0	60,869	6.62	*	69,789	8.22	-50,352	-50,352	5.00
Glass Solar	118,509	0	0	118,509	12.88	*	119,754	14.10	0	0	0.00
Glass Cond	38,021	0	0	38,021	4.13	*	39,654	4.67	-95,930	-95,930	9.57
Wall Cond	487,767	0	0	487,767	53.01	*	544,964	64.17	-603,455	-603,455	60.18
Partition	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Exposed Floor	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Infiltration	100,409	0	0	100,409	10.91	*	42,789	5.04	-122,542	-122,542	12.22
Sub Total==>	805,576	0	0	805,576	87.56	*	816,950	96.19	-872,278	-872,278	86.99
Internal Loads											
Lights	31,045	0	0	31,045	3.37	*	31,045	3.66	0	0	0.00
People	2,900	0	0	2,900	0.32	*	1,275	0.15	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Sub Total==>	33,945	0	0	33,945	3.69	*	32,320	3.81	0	0	0.00
Ceiling Load	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Outside Air	0	0	0	80,537	8.75	*	0	0.00	0	-78,631	7.84
Sup. Fan Heat	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Ret. Fan Heat	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Duct Heat Pkup	0	0	0	0	0.00	*	0	0.00	0	0	0.00
OV/UNDR Sizing	0	0	0	0	0.00	*	0	0.00	-51,824	-51,824	5.17
Exhaust Heat	0	0	0	0	0.00	*	0	0.00	0	0	0.00
Terminal Bypass	0	0	0	0	-0.00	*	0	0.00	0	0	0.00
Grand Total==>	839,521	0	0	920,058	100.00	*	849,269	100.00	-924,102	-1,002,733	100.00

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR	Leaving DB/WB/HR
	(Tons)	(Mbh)	(cfm)	Deg F Deg F Grains	Deg F Deg F Grains
Main Clg	76.7	920.1	820.3	53,415	75.6 63.0 66.4
Aux Clg	0.0	0.0	0.0	0	0.0 0.0 0.0
Opt Vent	0.0	0.0	0.0	0	0.0 0.0 0.0
Totals	76.7	920.1			

-----AREAS-----

	Gross Total	Glass (sf)	(%)
Floor	15,918		
Part	0		
ExFlr	0		
Roof	15,918	0	0
Wall	24,545	1,893	8

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg
	(Mbh)	(cfm)	Deg F	Deg F
Main Htg	-1,002.7	53,415	66.7	83.6
Aux Htg	0.0	0	0.0	0.0
Preheat	-0.0	53,415	66.7	60.7
Reheat	0.0	0	0.0	0.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-1,002.7			

-----AIRFLOWS (cfm)-----

	Type	Cooling	Heating
Vent	1,575	1,575	
Infil	1,964	2,455	
Supply	53,415	53,415	
Mincfm	0	0	
Return	53,415	53,415	
Exhaust	1,575	1,575	
Rm Exh	0	0	
Auxil	0	0	

-----ENGINEERING CHECKS-----

	Clg % OA	2.9
Clg Cfm/Sqft	3.36	
Clg Cfm/Ton	696.67	
Clg Sft/Ton	207.61	
Clg Btuh/Sqft	57.80	
No. People	105	
Htg % OA	2.9	
Htg Cfm/Sqft	3.36	
Htg Btuh/Sqft	-62.99	

-----TEMPERATURES (F)-----

	Type	Clg	Htg
SAOB	60.7	83.6	
Plenum	75.0	68.0	
Return	75.0	68.0	
Ret/OA	75.6	66.7	
Runarnd	75.0	68.0	
Fn MtrTD	0.0	0.0	
Fn BldTD	0.0	0.0	
Fn Frict	0.0	0.0	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-470,378	0.0	-544,953	1.4	-527,592	1.7	-527,592	1.7	-527,592	1.7
2	32.9	30.7	-414,870	0.0	-552,403	1.0	-549,765	1.0	-549,765	1.0	-549,765	1.0
3	33.1	31.3	-412,292	0.0	-563,457	0.0	-562,917	0.0	-562,917	0.0	-562,917	0.0
4	33.9	32.1	-423,103	0.0	-556,802	0.0	-556,694	0.0	-556,694	0.0	-556,694	0.0
5	35.2	33.5	-436,921	0.0	-546,426	0.0	-546,404	0.0	-546,404	0.0	-546,404	0.0
6	37.0	35.4	-439,727	0.0	-531,384	0.0	-531,380	0.0	-531,380	0.0	-531,380	0.0
7	39.0	37.6	-432,331	0.0	-514,513	0.0	-514,512	0.0	-514,512	0.0	-514,512	0.0
8	41.3	40.1	-409,327	0.0	-491,229	0.0	-491,229	0.0	-491,229	0.0	-491,229	0.0
9	43.7	42.5	-367,706	0.0	-460,759	0.0	-460,759	0.0	-460,759	0.0	-460,759	0.0
10	46.1	44.0	-300,809	0.0	-416,630	0.0	-416,630	0.0	-416,630	0.0	-416,630	0.0
11	48.4	45.0	-201,512	0.0	-354,968	0.0	-354,968	0.0	-354,968	0.0	-354,968	0.0
12	50.5	45.6	-94,971	0.0	-287,686	0.0	-287,686	0.0	-287,686	0.0	-287,686	0.0
13	52.2	46.1	-8,118	0.0	-229,010	0.0	-229,010	0.0	-229,010	0.0	-229,010	0.0
14	53.5	46.4	-5,807	0.0	-179,459	0.0	-179,459	0.0	-179,459	0.0	-179,459	0.0
15	54.3	46.3	0	1.9	-140,379	0.0	-140,379	0.0	-140,379	0.0	-140,379	0.0
16	54.6	46.1	-5,648	6.4	-114,457	0.9	-114,457	0.9	-114,457	0.9	-114,457	0.9
17	54.0	45.9	-5,055	16.7	-109,506	1.0	-109,506	1.0	-109,506	1.0	-109,506	1.0
18	52.5	45.0	0	9.7	-128,048	1.4	-128,048	1.4	-128,048	1.4	-128,048	1.4
19	50.1	44.8	0	1.0	-175,972	0.0	-175,972	0.0	-175,972	0.0	-175,972	0.0
20	47.1	43.3	0	0.0	-237,389	0.0	-237,389	0.0	-237,389	0.0	-237,389	0.0
21	43.7	40.4	-50,048	1.4	-303,781	1.3	-303,781	1.3	-303,781	1.3	-303,781	1.3
22	40.4	37.3	-148,061	4.4	-371,994	1.8	-371,994	1.8	-371,994	1.8	-371,994	1.8
23	37.3	34.9	-232,094	0.7	-437,870	1.9	-437,870	1.9	-437,870	1.9	-437,870	1.9
24	34.9	32.6	-276,467	0.0	-489,449	2.0	-489,449	2.0	-489,449	2.0	-489,449	2.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-275,503	0.0	-381,212	0.0	-395,667	0.0	-395,667	0.0	-395,667	0.0
2	39.7	37.1	-323,805	0.0	-428,061	0.0	-434,705	0.0	-434,705	0.0	-434,705	0.0
3	37.8	35.1	-359,595	0.0	-470,575	0.0	-473,637	0.0	-473,637	0.0	-473,637	0.0
4	36.3	33.8	-389,238	0.0	-502,818	0.0	-504,230	0.0	-504,230	0.0	-504,230	0.0
5	35.1	32.6	-407,958	0.0	-529,842	0.0	-530,494	0.0	-530,494	0.0	-530,494	0.0
6	34.4	32.0	-413,994	0.0	-552,757	0.0	-553,058	0.0	-553,058	0.0	-553,058	0.0
7	34.1	31.9	-409,346	0.0	-569,528	0.0	-569,668	0.0	-569,668	0.0	-569,668	0.0
8	34.6	32.4	-387,791	0.0	-569,031	0.0	-569,094	0.0	-569,094	0.0	-569,094	0.0
9	36.0	33.8	-348,160	0.0	-549,365	0.0	-549,394	0.0	-549,394	0.0	-549,394	0.0
10	38.2	34.7	-281,044	0.0	-507,505	0.0	-507,519	0.0	-507,519	0.0	-507,519	0.0
11	40.9	36.2	-187,035	0.0	-446,619	0.0	-446,626	0.0	-446,626	0.0	-446,626	0.0
12	43.9	37.4	-85,178	0.0	-376,083	0.0	-376,087	0.0	-376,087	0.0	-376,087	0.0
13	46.9	39.4	-6,325	0.0	-307,537	0.0	-307,538	0.0	-307,538	0.0	-307,538	0.0
14	49.7	41.4	-5,851	0.0	-243,252	0.0	-243,254	0.0	-243,254	0.0	-243,254	0.0
15	51.8	42.8	-5,149	1.3	-192,278	0.0	-192,278	0.0	-192,278	0.0	-192,278	0.0
16	53.2	43.9	0	7.8	-152,333	0.0	-152,334	0.0	-152,334	0.0	-152,334	0.0
17	53.7	44.2	0	17.3	-131,729	0.0	-131,729	0.0	-131,729	0.0	-131,729	0.0
18	53.4	44.4	0	13.3	-127,099	0.0	-127,099	0.0	-127,099	0.0	-127,099	0.0
19	52.7	44.4	0	5.1	-140,195	0.0	-140,195	0.0	-140,195	0.0	-140,195	0.0
20	51.5	45.2	0	0.0	-175,613	0.0	-175,613	0.0	-175,613	0.0	-175,613	0.0
21	50.0	44.6	-18,344	1.1	-217,444	0.0	-217,444	0.0	-217,444	0.0	-217,444	0.0
22	48.1	43.3	-118,630	2.7	-265,608	0.0	-265,608	0.0	-265,608	0.0	-265,608	0.0
23	46.1	41.8	-194,926	3.3	-310,943	0.0	-310,943	0.0	-310,943	0.0	-310,943	0.0
24	43.9	40.1	-258,113	0.0	-354,331	0.0	-354,331	0.0	-354,331	0.0	-354,331	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-77,421	0.0	-92,852	1.7	-164,069	0.0	-164,069	0.0	-164,069	0.0
2	48.7	44.6	-109,122	0.0	-204,361	0.5	-228,122	0.0	-228,122	0.0	-228,122	0.0
3	46.6	42.9	-142,493	0.0	-265,031	0.0	-273,125	0.0	-273,125	0.0	-273,125	0.0
4	44.9	41.4	-174,716	0.0	-307,080	0.0	-310,647	0.0	-310,647	0.0	-310,647	0.0
5	43.9	40.8	-193,355	0.0	-334,094	0.0	-335,708	0.0	-335,708	0.0	-335,708	0.0
6	43.5	40.8	-200,142	0.0	-353,907	0.0	-354,646	0.0	-354,646	0.0	-354,646	0.0
7	44.0	41.4	-193,138	0.0	-360,289	0.0	-360,629	0.0	-360,629	0.0	-360,629	0.0
8	45.4	42.7	-165,352	0.0	-349,812	0.0	-349,970	0.0	-349,970	0.0	-349,970	0.0
9	47.7	44.3	-112,775	0.0	-314,947	0.0	-315,019	0.0	-315,019	0.0	-315,019	0.0
10	50.6	45.8	-28,415	0.0	-258,446	0.0	-258,479	0.0	-258,479	0.0	-258,479	0.0
11	53.9	47.4	0	0.0	-186,695	0.0	-186,711	0.0	-186,711	0.0	-186,711	0.0
12	57.4	49.0	-6,681	0.8	-105,858	0.0	-105,866	0.0	-105,866	0.0	-105,866	0.0
13	60.7	50.8	-6,516	1.5	-31,288	0.0	-31,292	0.0	-31,292	0.0	-31,292	0.0
14	63.6	52.7	-7,313	24.1	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	31.5	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	36.8	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	38.2	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	36.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	27.2	0	4.5	0	4.5	0	4.5	0	4.5
20	64.7	56.0	0	17.7	0	1.0	0	1.0	0	1.0	0	1.0
21	62.5	56.0	0	9.8	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	2.6	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.2	49.4	0	0.9	-65,303	0.8	-65,303	0.8	-65,303	0.8	-65,303	0.8

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	-5,888	0.0	0	0.0	0	0.4	0	0.4	0	0.4
2	58.9	54.9	0	1.0	0	0.6	0	0.9	0	0.9	0	0.9
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	-63,271	0.0	-71,212	0.0	-71,212	0.0	-71,212	0.0
5	54.2	51.4	0	0.0	-123,509	0.0	-126,551	0.0	-126,551	0.0	-126,551	0.0
6	53.5	50.9	0	0.0	-156,427	0.0	-157,708	0.0	-157,708	0.0	-157,708	0.0
7	53.2	51.1	0	0.0	-173,841	0.0	-174,410	0.0	-174,410	0.0	-174,410	0.0
8	53.9	51.5	-5,676	0.0	-165,434	0.0	-165,693	0.0	-165,693	0.0	-165,693	0.0
9	55.9	52.1	0	0.0	-124,646	0.0	-124,764	0.0	-124,764	0.0	-124,764	0.0
10	58.9	53.2	-5,198	0.0	-63,795	0.0	-63,849	0.0	-63,849	0.0	-63,849	0.0
11	62.6	55.2	-6,228	3.3	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	-5,116	21.2	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	30.3	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	37.2	-5,912	0.7	-5,912	0.7	-5,912	0.7	-5,912	0.7
15	75.2	62.2	0	43.6	0	6.8	0	6.8	0	6.8	0	6.8
16	75.9	62.2	0	47.5	0	18.1	0	18.2	0	18.2	0	18.2
17	75.6	62.0	0	49.0	0	20.5	0	20.7	0	20.7	0	20.7
18	74.9	61.7	0	47.5	0	20.6	0	20.8	0	20.8	0	20.8
19	73.7	62.0	0	41.1	0	18.3	0	18.4	0	18.4	0	18.4
20	72.1	62.4	0	32.6	0	13.9	0	13.9	0	13.9	0	13.9
21	70.2	63.3	0	24.6	0	9.9	0	9.9	0	9.9	0	9.9
22	68.0	62.5	0	17.1	0	5.8	0	5.8	0	5.8	0	5.8
23	65.7	60.5	0	10.7	0	2.0	0	2.0	0	2.0	0	2.0
24	63.4	58.5	0	6.3	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

May			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	13.3	0	6.1	0	6.9	0	6.9	0	6.9
2	65.7	61.5	0	11.7	0	1.6	0	1.8	0	1.8	0	1.8
3	63.6	59.7	0	7.6	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	3.9	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	2.0	0	0.6	0	0.6	0	0.6	0	0.6
6	59.7	56.5	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	5.3	-5,956	0.0	-5,956	0.0	-5,956	0.0	-5,956	0.0
9	62.4	56.3	0	12.6	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	20.6	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	27.7	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	36.0	0	1.5	0	1.6	0	1.6	0	1.6
13	78.5	63.7	0	42.9	0	7.7	0	7.8	0	7.8	0	7.8
14	81.9	65.3	0	49.8	0	20.9	0	21.2	0	21.2	0	21.2
15	84.1	66.9	0	56.1	0	28.0	0	28.3	0	28.3	0	28.3
16	84.9	67.1	0	60.1	0	32.8	0	32.9	0	32.9	0	32.9
17	84.6	67.3	0	61.6	0	34.9	0	34.9	0	34.9	0	34.9
18	83.8	67.1	0	61.3	0	36.8	0	36.8	0	36.8	0	36.8
19	82.4	67.5	0	56.9	0	35.6	0	35.6	0	35.6	0	35.6
20	80.6	68.9	0	48.7	0	32.2	0	32.2	0	32.2	0	32.2
21	78.5	71.0	0	39.9	0	27.2	0	27.2	0	27.2	0	27.2
22	76.1	69.9	0	32.4	0	23.2	0	23.2	0	23.2	0	23.2
23	73.4	68.0	0	26.5	0	16.9	0	16.9	0	16.9	0	16.9
24	70.8	65.5	0	20.2	0	12.2	0	12.2	0	12.2	0	12.2

June			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	33.2	0	18.9	0	20.6	0	20.6	0	20.6
2	72.6	68.4	0	28.1	0	14.6	0	15.2	0	15.2	0	15.2
3	70.9	67.3	0	24.0	0	10.6	0	10.9	0	10.9	0	10.9
4	69.6	66.5	0	21.7	0	6.6	0	6.7	0	6.7	0	6.7
5	68.7	65.8	0	19.1	0	2.6	0	2.7	0	2.7	0	2.7
6	68.5	65.7	0	17.4	0	1.1	0	1.1	0	1.1	0	1.1
7	69.0	66.3	0	18.8	0	1.1	0	1.1	0	1.1	0	1.1
8	70.6	66.9	0	25.1	0	5.8	0	5.8	0	5.8	0	5.8
9	73.0	67.7	0	33.3	0	13.2	0	13.2	0	13.2	0	13.2
10	76.1	68.1	0	40.7	0	18.9	0	18.9	0	18.9	0	18.9
11	79.5	69.1	0	46.9	0	23.8	0	23.8	0	23.8	0	23.8
12	82.9	70.1	0	53.1	0	29.4	0	29.4	0	29.4	0	29.4
13	86.0	71.0	0	59.6	0	34.2	0	34.2	0	34.2	0	34.2
14	88.4	72.5	0	64.9	0	41.1	0	41.1	0	41.1	0	41.1
15	90.0	74.0	0	70.5	0	47.1	0	47.1	0	47.1	0	47.1
16	90.5	73.7	0	75.0	0	49.7	0	49.7	0	49.7	0	49.7
17	90.3	74.2	0	76.7	0	52.4	0	52.4	0	52.4	0	52.4
18	89.4	73.9	0	75.4	0	53.7	0	53.7	0	53.7	0	53.7
19	88.1	74.5	0	73.8	0	53.1	0	53.1	0	53.1	0	53.1
20	86.4	75.3	0	66.7	0	47.5	0	47.5	0	47.5	0	47.5
21	84.3	76.5	0	57.0	0	41.6	0	41.6	0	41.6	0	41.6
22	81.9	75.7	0	49.8	0	36.0	0	36.0	0	36.0	0	36.0
23	79.5	74.0	0	42.4	0	31.1	0	31.1	0	31.1	0	31.1
24	77.0	72.1	0	37.5	0	25.4	0	25.4	0	25.4	0	25.4

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	33.3	0	14.2	0	15.6	0	15.6	0	15.6
2	72.4	69.4	0	27.8	0	11.6	0	12.2	0	12.2	0	12.2
3	71.3	68.4	0	25.2	0	7.5	0	7.8	0	7.8	0	7.8
4	70.5	67.7	0	23.0	0	5.2	0	5.3	0	5.3	0	5.3
5	70.0	67.4	0	21.0	0	2.8	0	2.8	0	2.8	0	2.8
6	69.9	67.5	0	19.2	0	1.2	0	1.2	0	1.2	0	1.2
7	70.3	68.0	0	20.8	0	1.3	0	1.3	0	1.3	0	1.3
8	71.7	69.0	0	26.0	0	5.5	0	5.5	0	5.5	0	5.5
9	73.7	69.5	0	32.6	0	13.5	0	13.6	0	13.6	0	13.6
10	76.2	70.6	0	39.1	0	20.1	0	20.2	0	20.2	0	20.2
11	78.9	71.8	0	44.9	0	24.6	0	24.6	0	24.6	0	24.6
12	81.4	73.0	0	51.5	0	31.0	0	31.0	0	31.0	0	31.0
13	83.4	74.4	0	58.5	0	35.9	0	35.9	0	35.9	0	35.9
14	84.8	74.8	0	62.2	0	39.9	0	39.9	0	39.9	0	39.9
15	85.2	75.0	0	67.2	0	45.0	0	45.0	0	45.0	0	45.0
16	85.1	75.0	0	71.3	0	46.8	0	46.8	0	46.8	0	46.8
17	84.6	74.7	0	73.1	0	47.6	0	47.6	0	47.6	0	47.6
18	83.8	74.6	0	72.2	0	47.7	0	47.7	0	47.7	0	47.7
19	82.7	74.6	0	69.4	0	46.2	0	46.2	0	46.2	0	46.2
20	81.4	74.4	0	61.7	0	41.6	0	41.6	0	41.6	0	41.6
21	79.9	74.9	0	53.9	0	35.2	0	35.2	0	35.2	0	35.2
22	78.4	74.0	0	46.3	0	29.7	0	29.7	0	29.7	0	29.7
23	76.8	72.7	0	40.4	0	24.1	0	24.1	0	24.1	0	24.1
24	75.2	71.6	0	36.3	0	19.6	0	19.6	0	19.6	0	19.6

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	33.1	0	17.4	0	18.8	0	18.8	0	18.8
2	73.2	70.3	0	27.5	0	13.5	0	14.1	0	14.1	0	14.1
3	71.7	68.9	0	24.1	0	10.1	0	10.4	0	10.4	0	10.4
4	70.4	67.8	0	21.0	0	6.9	0	7.1	0	7.1	0	7.1
5	69.5	66.8	0	18.7	0	2.8	0	2.8	0	2.8	0	2.8
6	68.9	66.4	0	16.9	0	1.2	0	1.2	0	1.2	0	1.2
7	68.7	66.4	0	17.4	0	0.8	0	0.8	0	0.8	0	0.8
8	69.2	66.8	0	21.1	0	2.4	0	2.4	0	2.4	0	2.4
9	70.8	67.7	0	28.7	0	6.8	0	6.8	0	6.8	0	6.8
10	73.2	67.7	0	36.5	0	12.4	0	12.5	0	12.5	0	12.5
11	76.2	68.8	0	44.9	0	20.6	0	20.7	0	20.7	0	20.7
12	79.3	70.3	0	52.3	0	27.5	0	27.5	0	27.5	0	27.5
13	82.3	72.2	0	59.5	0	33.3	0	33.3	0	33.3	0	33.3
14	84.7	73.7	0	66.3	0	39.4	0	39.4	0	39.4	0	39.4
15	86.3	74.6	0	72.0	0	45.9	0	45.9	0	45.9	0	45.9
16	86.8	75.1	0	75.6	0	49.4	0	49.4	0	49.4	0	49.4
17	86.6	75.1	0	76.7	0	50.6	0	50.6	0	50.6	0	50.6
18	86.0	75.3	0	74.4	0	51.4	0	51.4	0	51.4	0	51.4
19	85.1	76.0	0	68.5	0	48.0	0	48.0	0	48.0	0	48.0
20	83.8	76.8	0	60.6	0	42.5	0	42.5	0	42.5	0	42.5
21	82.3	77.2	0	53.2	0	37.5	0	37.5	0	37.5	0	37.5
22	80.6	76.3	0	46.3	0	33.2	0	33.2	0	33.2	0	33.2
23	78.7	75.3	0	40.0	0	28.3	0	28.3	0	28.3	0	28.3
24	76.8	73.7	0	35.2	0	23.5	0	23.5	0	23.5	0	23.5

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	21.2	0	7.3	0	8.4	0	8.4	0	8.4
2	67.6	65.0	0	15.6	0	3.3	0	3.7	0	3.7	0	3.7
3	65.8	63.4	0	11.7	0	0.9	0	1.0	0	1.0	0	1.0
4	64.3	62.2	0	8.7	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	5.8	0	0.5	0	0.6	0	0.6	0	0.6
6	62.4	60.3	0	4.8	0	1.0	0	1.0	0	1.0	0	1.0
7	62.2	60.2	0	3.5	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	6.1	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	13.7	-5,583	0.0	-5,583	0.0	-5,583	0.0	-5,583	0.0
10	67.6	62.1	0	24.1	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	34.4	0	1.2	0	1.2	0	1.2	0	1.2
12	74.8	64.6	0	43.1	0	3.2	0	3.3	0	3.3	0	3.3
13	78.3	66.7	0	51.3	-5,650	25.4	-5,650	25.9	-5,650	25.9	-5,650	25.9
14	81.2	68.4	0	59.5	0	31.4	0	31.6	0	31.6	0	31.6
15	83.0	70.0	0	65.4	0	36.1	0	36.1	0	36.1	0	36.1
16	83.7	70.5	0	69.6	0	40.1	0	40.1	0	40.1	0	40.1
17	83.4	70.5	0	69.3	0	42.7	0	42.7	0	42.7	0	42.7
18	82.8	70.9	0	65.1	0	41.4	0	41.4	0	41.4	0	41.4
19	81.6	72.7	0	56.8	0	37.1	0	37.1	0	37.1	0	37.1
20	80.1	74.7	0	49.7	0	31.7	0	31.7	0	31.7	0	31.7
21	78.3	74.1	0	41.7	0	28.4	0	28.4	0	28.4	0	28.4
22	76.3	72.4	0	34.6	0	23.0	0	23.0	0	23.0	0	23.0
23	74.1	70.7	0	28.7	0	18.0	0	18.0	0	18.0	0	18.0
24	71.8	68.9	0	23.5	0	13.2	0	13.2	0	13.2	0	13.2

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-33,445	0.0	-118,374	1.4	-118,374	1.4	-118,374	1.4
2	50.1	48.6	0	0.0	-147,804	3.0	-185,922	0.0	-185,922	0.0	-185,922	0.0
3	48.4	46.9	-30,212	0.0	-223,038	0.0	-225,914	0.0	-225,914	0.0	-225,914	0.0
4	47.1	45.8	-91,901	0.0	-257,206	0.0	-258,209	0.0	-258,209	0.0	-258,209	0.0
5	46.3	44.8	-130,548	0.0	-283,776	0.0	-284,173	0.0	-284,173	0.0	-284,173	0.0
6	46.0	44.5	-140,994	0.0	-303,584	0.0	-303,754	0.0	-303,754	0.0	-303,754	0.0
7	46.8	45.3	-136,408	0.0	-303,440	0.0	-303,517	0.0	-303,517	0.0	-303,517	0.0
8	48.9	47.5	-111,616	0.0	-279,060	0.0	-279,094	0.0	-279,094	0.0	-279,094	0.0
9	52.2	49.9	-52,009	0.0	-227,507	0.0	-227,522	0.0	-227,522	0.0	-227,522	0.0
10	56.2	52.5	0	0.0	-149,452	0.0	-149,460	0.0	-149,460	0.0	-149,460	0.0
11	60.4	54.4	-7,243	0.0	-58,495	0.0	-58,497	0.0	-58,497	0.0	-58,497	0.0
12	64.4	56.0	-10,096	1.0	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	-5,113	18.6	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	33.1	-5,262	0.7	-5,262	0.7	-5,262	0.7	-5,262	0.7
15	70.6	58.1	0	40.1	0	2.0	0	2.0	0	2.0	0	2.0
16	70.3	57.5	0	43.6	0	7.9	0	7.9	0	7.9	0	7.9
17	69.5	57.3	0	43.2	0	15.9	0	15.9	0	15.9	0	15.9
18	68.2	57.7	0	36.8	0	12.5	0	12.5	0	12.5	0	12.5
19	66.5	60.6	0	27.4	0	7.3	0	7.3	0	7.3	0	7.3
20	64.4	60.8	0	18.9	0	2.9	0	2.9	0	2.9	0	2.9
21	62.1	59.4	0	11.4	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.7	0	0.4	0	0.4	0	0.4	0	0.4
24	54.5	52.7	0	0.4	-27,850	0.0	-27,850	0.0	-27,850	0.0	-27,850	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI-ZONE SYSTEMS

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-44,633	0.0	-83,869	1.6	-143,925	0.0	-143,925	0.0	-143,925	0.0
2	49.4	47.3	-105,324	0.0	-188,807	0.4	-208,149	0.0	-208,149	0.0	-208,149	0.0
3	47.2	45.3	-151,488	0.0	-248,710	0.0	-255,069	0.0	-255,069	0.0	-255,069	0.0
4	45.3	43.4	-185,648	0.0	-293,338	0.0	-296,120	0.0	-296,120	0.0	-296,120	0.0
5	43.9	42.2	-206,777	0.0	-325,742	0.0	-326,998	0.0	-326,998	0.0	-326,998	0.0
6	43.0	41.4	-210,818	0.0	-351,051	0.0	-351,627	0.0	-351,627	0.0	-351,627	0.0
7	42.7	41.2	-204,521	0.0	-367,536	0.0	-367,801	0.0	-367,801	0.0	-367,801	0.0
8	43.5	42.0	-178,657	0.0	-364,552	0.0	-364,675	0.0	-364,675	0.0	-364,675	0.0
9	45.9	44.0	-121,669	0.0	-328,702	0.0	-328,758	0.0	-328,758	0.0	-328,758	0.0
10	49.4	46.6	-33,654	0.0	-262,119	0.0	-262,145	0.0	-262,145	0.0	-262,145	0.0
11	53.8	48.6	-5,431	0.0	-169,961	0.0	-169,973	0.0	-169,973	0.0	-169,973	0.0
12	58.4	50.6	-9,125	0.9	-73,700	0.0	-73,706	0.0	-73,706	0.0	-73,706	0.0
13	62.8	52.6	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
14	66.3	54.5	0	26.4	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	36.4	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	40.7	0	1.2	0	1.2	0	1.2	0	1.2
17	69.2	55.8	0	38.9	0	3.0	0	3.0	0	3.0	0	3.0
18	68.3	57.0	0	31.9	0	2.8	0	2.8	0	2.8	0	2.8
19	66.9	59.4	0	22.5	0	3.6	0	3.6	0	3.6	0	3.6
20	65.0	59.4	0	13.5	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	6.1	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	1.1	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5	54.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
24	54.7	51.7	0	0.5	-51,154	0.4	-51,154	0.4	-51,154	0.4	-51,154	0.4

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-154,456	0.0	-313,381	0.0	-317,460	0.0	-317,460	0.0	-317,460	0.0
2	43.2	41.1	-204,841	0.0	-350,396	0.0	-353,222	0.0	-353,222	0.0	-353,222	0.0
3	41.8	39.8	-239,708	0.0	-381,457	0.0	-382,952	0.0	-382,952	0.0	-382,952	0.0
4	40.7	38.7	-268,719	0.0	-409,435	0.0	-410,165	0.0	-410,165	0.0	-410,165	0.0
5	40.1	38.4	-288,533	0.0	-428,586	0.0	-428,931	0.0	-428,931	0.0	-428,931	0.0
6	39.9	38.4	-291,244	0.0	-440,527	0.0	-440,689	0.0	-440,689	0.0	-440,689	0.0
7	40.5	39.0	-287,709	0.0	-441,867	0.0	-441,942	0.0	-441,942	0.0	-441,942	0.0
8	42.2	40.7	-269,206	0.0	-424,902	0.0	-424,937	0.0	-424,937	0.0	-424,937	0.0
9	44.9	43.4	-230,095	0.0	-389,281	0.0	-389,297	0.0	-389,297	0.0	-389,297	0.0
10	48.2	45.8	-165,609	0.0	-335,380	0.0	-335,388	0.0	-335,388	0.0	-335,388	0.0
11	51.7	48.3	-68,004	0.0	-259,592	0.0	-259,596	0.0	-259,596	0.0	-259,596	0.0
12	55.0	50.7	0	0.0	-176,339	0.0	-176,341	0.0	-176,341	0.0	-176,341	0.0
13	57.7	52.0	-7,733	0.0	-104,493	0.0	-104,494	0.0	-104,494	0.0	-104,494	0.0
14	59.5	52.6	0	4.3	-51,583	0.0	-51,584	0.0	-51,584	0.0	-51,584	0.0
15	60.1	52.7	0	14.3	-21,171	0.0	-21,171	0.0	-21,171	0.0	-21,171	0.0
16	59.9	52.6	0	25.4	-6,448	0.0	-6,448	0.0	-6,448	0.0	-6,448	0.0
17	59.2	52.1	0	24.3	0	0.0	0	0.0	0	0.0	0	0.0
18	58.2	51.8	0	16.9	0	0.0	0	0.0	0	0.0	0	0.0
19	56.8	52.2	0	8.6	-36,070	0.0	-36,070	0.0	-36,070	0.0	-36,070	0.0
20	55.0	51.4	0	0.6	-87,949	0.0	-87,949	0.0	-87,949	0.0	-87,949	0.0
21	53.1	50.1	0	0.0	-138,233	0.0	-138,233	0.0	-138,233	0.0	-138,233	0.0
22	51.0	48.1	0	0.0	-185,774	0.0	-185,774	0.0	-185,774	0.0	-185,774	0.0
23	48.9	46.2	-37,571	0.0	-230,674	0.0	-230,674	0.0	-230,674	0.0	-230,674	0.0
24	46.9	44.1	-112,153	0.0	-273,286	0.0	-273,286	0.0	-273,286	0.0	-273,286	0.0

01 Card - Job Information

 Project: ENERGY STUDY OF HEATING PLANT
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29607 (3 BUILDINGS)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	GYM

-----CARD 20-- General Room Parameters -----

Zone							Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
1	1	GYM	120	94.75	2	0		32			

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	1	OFFICES	48	94.75	2	0		10.5			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				199			
2	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	163	29		178	180			
1	2	94.75	29		15	270			
1	3	163	29		15	0			
1	4	98.75	29		15	90			
2	1	48	98.75		15	180			
2	2	48	98.75		15	0			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	3	8.5	35	1.03	.82					
1	2	3	8.5	35	1.03	.82					
2	2	3	2	18	1.03	.82					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	100	PEOPLE	255	325	2	WATT-SF	ASHRAE2				
2	5	PEOPLE	255	325	2	WATT-SF	ASHRAE2				

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----		-----Heating-----		-----Cooling-----		-----Heating-----		-----Infiltration-----		--Reheat Minimum--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF				
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF				

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----		-----Heating-----		-----Cooling-----		-----Heating-----		-----Auxiliary-----		--Room Exhaust--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF								
2	1	CFM-SF	1	CFM-SF								

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	MULTI-ZONE SYSTEMS

-----CARD 40--- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----							
System Set	System	Ventil Deck	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	NZ						

-----CARD 41-- Zone Assignment -----

System Set	Ref #1	Ref #2	Ref #3	Ref #4	Ref #5	Ref #6
Number	Begin	End	Begin	End	Begin	End
1	1	1				

-----CARD 42--- Fan SP and Duct Parameters-----

System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path

1

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

FGHEAT SCHD FOR HEAT LOAD CALCS

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

YES AVAILABLE (100%)

System:

MZ (Utility file not found)

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BOM
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 72
24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100
24

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*****  
*****  
**                                     **  
**          TRACE    600    ANALYSIS          **  
**                                     **  
**          by              **  
**                                     **  
*****  
*****
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ACADEMIC TRAINING BUILDING
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 24701 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 13:37:16 8/19/94
Dataset Name: FGTYP510 .TM

System 1 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==> Mo/Hr: 7/17 * Mo/Hr: 6/19 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 94/ 75/105.0 * OADB: 93 * OADB: 23

	Space Sens.+Lat. (Btuh)	Ret. Air Sensible (Btuh)	Ret. Air Latent (Btuh)	Net Total (Btuh)	Perct Of Tot (%)		Space Sensible (Btuh)	Perct Of Tot (%)		Space Peak Space Sens (Btuh)	Coil Peak Tot Sens (Btuh)	Perct Of Tot (%)
Envelope Loads												
Skylite Solr	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	1,249,498	0	0	1,249,498	53.81	*	1,398,560	77.14	*	-986,445	-986,445	43.21
Glass Solar	89,216	0	0	89,216	3.84	*	82,688	4.56	*	0	0	0.00
Glass Cond	39,671	0	0	39,671	1.71	*	41,688	2.30	*	-110,271	-110,271	4.83
Wall Cond	192,536	0	0	192,536	8.29	*	235,877	13.01	*	-375,069	-375,069	16.43
Partition	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	131,709	0	0	131,709	5.67	*	54,209	2.99	*	-170,350	-170,350	7.46
Sub Total==>	1,702,629	0	0	1,702,629	73.32	*	1,813,022	100.00	*	-1,642,136	-1,642,136	71.92
Internal Loads												
Lights	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
People	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	619,528	26.68	*	0	0.00	*	0	-641,028	28.08
Sup. Fan Heat	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ret. Fan Heat	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Duct Heat Pkup	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
OV/UNDR Sizing	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Terminal Bypass	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Grand Total==>	1,702,629	0	0	2,322,157	100.00	*	1,813,022	100.00	*	-1,642,136	-2,283,164	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----			
	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)		
				Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	81,096		
Main Clg	193.5	2,322.2	1,890.5	102,499	77.3	64.4	70.2	59.1	57.1	66.8	Part	0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	40,548	0 0
Totals	193.5	2,322.2									Wall	34,122	2,176 6

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating	Clg % OA			Type	Clg	Htg
				Vent	12,840	12,840	Clg Cfm/Sqft	1.26		SADB	59.1	82.4
Main Htg	-2,283.2	102,499	62.4	Infil	2,730	3,412	Clg Cfm/Ton	529.67		Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	Supply	102,499	102,499	Clg Sqft/Ton	419.07		Return	75.0	68.0
Preheat	-0.0	102,499	62.4	Mincfm	0	0	Clg Btuh/Sqft	28.63		Ret/OA	77.3	62.4
Reheat	0.0	0	0.0	Return	102,499	102,499	No. People	856		Runarnd	75.0	68.0
Humidif	0.0	0	0.0	Exhaust	12,840	12,840	Htg % OA	12.5		Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.26		Fn BldTD	0.0	0.0
Total	-2,283.2			Auxil	0	0	Htg Btuh/Sqft	-28.15		Fn Frict	0.0	0.0

ZONE PSYCHROMETRICS - ALTERNATIVE 1
CLASSROOMS

----- PSYCHROMETRIC STATE POINTS -----

Zone 1

	Dry Bulb (F)	Wet Bulb (F)	Relat. Humid. (%)	Humid. Ratio (GR)	Enthalpy (Btu/Lb)	Temp. Diff. (F)
Space	75.0	62.5	50.0	65.3	28.2	
Main System						
Return Air Heat Pickup						0.0
Return Fan						0.0
Return Air	75.0	62.5	50.0	65.3	28.2	
Outdoor Air	95.0	76.0	42.3	105.7	39.5	
Return/Outdoor Air Mix	77.5	64.5	49.5	70.3	29.6	
Blow through Fan						0.0
Entering Coil	77.5	64.5	49.5	70.3	29.6	
Leaving Coil	59.1	56.7	86.6	65.2	24.3	
Draw Through Fan						0.0
Duct Frictional Heat						0.0
Supply Duct Heat Gain						0.0
Cold Deck Supply Air	59.1	56.7	86.6	65.2	24.3	
Supply Air	59.1	56.7	86.6	65.2	24.3	

Percent Outside Air	12.53 (%)
Sensible Heat Ratio (SHR)	0.981
Percent Supply Air Bypassing Coil	0.00 (%)
Coil Airflow	102,499 (Cfm)

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
VAV SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-1,854,205	0.0	-1,292,309	0.0	-1,292,309	0.0	-1,292,309	0.0	-1,292,309	0.0
2	32.9	30.7	-1,668,790	0.0	-1,371,557	0.0	-1,371,557	0.0	-1,371,557	0.0	-1,371,557	0.0
3	33.1	31.3	-1,028,274	0.0	-1,436,079	0.0	-1,436,079	0.0	-1,436,079	0.0	-1,436,079	0.0
4	33.9	32.1	-1,087,452	0.0	-1,472,199	0.0	-1,472,199	0.0	-1,472,199	0.0	-1,472,199	0.0
5	35.2	33.5	-1,159,968	0.0	-1,513,315	0.0	-1,513,315	0.0	-1,513,315	0.0	-1,513,315	0.0
6	37.0	35.4	-1,207,100	0.0	-1,541,947	0.0	-1,541,947	0.0	-1,541,947	0.0	-1,541,947	0.0
7	39.0	37.6	-1,253,675	0.0	-1,543,731	0.0	-1,543,731	0.0	-1,543,731	0.0	-1,543,731	0.0
8	41.3	40.1	-1,274,988	0.0	-1,541,637	0.0	-1,541,637	0.0	-1,541,637	0.0	-1,541,637	0.0
9	43.7	42.5	-1,222,572	0.0	-1,490,515	0.0	-1,490,515	0.0	-1,490,515	0.0	-1,490,515	0.0
10	46.1	44.0	-1,144,766	0.0	-1,460,161	0.0	-1,460,161	0.0	-1,460,161	0.0	-1,460,161	0.0
11	48.4	45.0	-1,009,573	0.0	-1,368,191	0.0	-1,368,191	0.0	-1,368,191	0.0	-1,368,191	0.0
12	50.5	45.6	-862,606	0.0	-1,268,830	0.0	-1,268,830	0.0	-1,268,830	0.0	-1,268,830	0.0
13	52.2	46.1	-661,066	0.0	-1,136,690	0.0	-1,136,690	0.0	-1,136,690	0.0	-1,136,690	0.0
14	53.5	46.4	-466,857	0.0	-1,001,072	0.0	-1,001,072	0.0	-1,001,072	0.0	-1,001,072	0.0
15	54.3	46.3	-294,338	0.0	-866,936	0.0	-866,936	0.0	-866,936	0.0	-866,936	0.0
16	54.6	46.1	-171,538	0.0	-751,643	0.0	-751,643	0.0	-751,643	0.0	-751,643	0.0
17	54.0	45.9	-98,053	0.0	-702,264	0.0	-702,264	0.0	-702,264	0.0	-702,264	0.0
18	52.5	45.0	-130,444	0.0	-679,110	0.0	-679,110	0.0	-679,110	0.0	-679,110	0.0
19	50.1	44.8	-181,181	0.0	-699,915	0.0	-699,915	0.0	-699,915	0.0	-699,915	0.0
20	47.1	43.3	-279,889	0.0	-796,798	0.0	-796,798	0.0	-796,798	0.0	-796,798	0.0
21	43.7	40.4	-400,254	0.0	-864,423	0.0	-864,423	0.0	-864,423	0.0	-864,423	0.0
22	40.4	37.3	-514,591	0.0	-1,000,082	0.0	-1,000,082	0.0	-1,000,082	0.0	-1,000,082	0.0
23	37.3	34.9	-618,162	0.0	-1,090,448	0.0	-1,090,448	0.0	-1,090,448	0.0	-1,090,448	0.0
24	34.9	32.6	-723,740	0.0	-1,187,475	0.0	-1,187,475	0.0	-1,187,475	0.0	-1,187,475	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-696,929	0.0	-1,063,898	0.0	-1,063,898	0.0	-1,063,898	0.0	-1,063,898	0.0
2	39.7	37.1	-817,427	0.0	-1,150,139	0.0	-1,150,139	0.0	-1,150,139	0.0	-1,150,139	0.0
3	37.8	35.1	-922,206	0.0	-1,236,798	0.0	-1,236,798	0.0	-1,236,798	0.0	-1,236,798	0.0
4	36.3	33.8	-990,253	0.0	-1,310,713	0.0	-1,310,713	0.0	-1,310,713	0.0	-1,310,713	0.0
5	35.1	32.6	-1,083,077	0.0	-1,391,355	0.0	-1,391,355	0.0	-1,391,355	0.0	-1,391,355	0.0
6	34.4	32.0	-1,132,161	0.0	-1,452,971	0.0	-1,452,971	0.0	-1,452,971	0.0	-1,452,971	0.0
7	34.1	31.9	-1,170,088	0.0	-1,524,422	0.0	-1,524,422	0.0	-1,524,422	0.0	-1,524,422	0.0
8	34.6	32.4	-1,176,900	0.0	-1,568,808	0.0	-1,568,808	0.0	-1,568,808	0.0	-1,568,808	0.0
9	36.0	33.8	-1,150,026	0.0	-1,565,191	0.0	-1,565,191	0.0	-1,565,191	0.0	-1,565,191	0.0
10	38.2	34.7	-1,058,567	0.0	-1,529,706	0.0	-1,529,706	0.0	-1,529,706	0.0	-1,529,706	0.0
11	40.9	36.2	-932,924	0.0	-1,474,215	0.0	-1,474,215	0.0	-1,474,215	0.0	-1,474,215	0.0
12	43.9	37.4	-773,450	0.0	-1,381,854	0.0	-1,381,854	0.0	-1,381,854	0.0	-1,381,854	0.0
13	46.9	39.4	-567,042	0.0	-1,219,558	0.0	-1,219,558	0.0	-1,219,558	0.0	-1,219,558	0.0
14	49.7	41.4	-366,323	0.0	-1,071,923	0.0	-1,071,923	0.0	-1,071,923	0.0	-1,071,923	0.0
15	51.8	42.8	-172,009	0.0	-914,877	0.0	-914,877	0.0	-914,877	0.0	-914,877	0.0
16	53.2	43.9	-26,367	0.0	-801,385	0.0	-801,385	0.0	-801,385	0.0	-801,385	0.0
17	53.7	44.2	0	0.0	-707,933	0.0	-707,933	0.0	-707,933	0.0	-707,933	0.0
18	53.4	44.4	0	0.0	-661,367	0.0	-661,367	0.0	-661,367	0.0	-661,367	0.0
19	52.7	44.4	0	0.0	-664,076	0.0	-664,076	0.0	-664,076	0.0	-664,076	0.0
20	51.5	45.2	-31,826	0.0	-699,644	0.0	-699,644	0.0	-699,644	0.0	-699,644	0.0
21	50.0	44.6	-226,332	0.0	-748,664	0.0	-748,664	0.0	-748,664	0.0	-748,664	0.0
22	48.1	43.3	-359,943	0.0	-816,309	0.0	-816,309	0.0	-816,309	0.0	-816,309	0.0
23	46.1	41.8	-462,401	0.0	-893,403	0.0	-893,403	0.0	-893,403	0.0	-893,403	0.0
24	43.9	40.1	-586,833	0.0	-982,231	0.0	-982,231	0.0	-982,231	0.0	-982,231	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
VAV SYSTEMS

March		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3 46.8	-37,174	0.0	0	0.0	-440,777	0.0	-440,777	0.0	-440,777	0.0
2	48.7 44.6	-160,952	0.0	0	0.0	-559,629	0.0	-559,629	0.0	-559,629	0.0
3	46.6 42.9	-289,183	0.0	-426,275	0.0	-644,274	0.0	-644,274	0.0	-644,274	0.0
4	44.9 41.4	-393,116	0.0	-747,807	0.0	-747,807	0.0	-747,807	0.0	-747,807	0.0
5	43.9 40.8	-475,177	0.0	-849,353	0.0	-849,353	0.0	-849,353	0.0	-849,353	0.0
6	43.5 40.8	-554,811	0.0	-911,679	0.0	-911,679	0.0	-911,679	0.0	-911,679	0.0
7	44.0 41.4	-589,009	0.0	-977,068	0.0	-977,068	0.0	-977,068	0.0	-977,068	0.0
8	45.4 42.7	-599,466	0.0	-1,002,501	0.0	-1,002,501	0.0	-1,002,501	0.0	-1,002,501	0.0
9	47.7 44.3	-544,596	0.0	-993,361	0.0	-993,361	0.0	-993,361	0.0	-993,361	0.0
10	50.6 45.8	-445,520	0.0	-949,586	0.0	-949,586	0.0	-949,586	0.0	-949,586	0.0
11	53.9 47.4	-287,830	0.0	-839,977	0.0	-839,977	0.0	-839,977	0.0	-839,977	0.0
12	57.4 49.0	-62,879	0.0	-686,353	0.0	-686,353	0.0	-686,353	0.0	-686,353	0.0
13	60.7 50.8	0	0.0	-509,946	0.0	-509,946	0.0	-509,946	0.0	-509,946	0.0
14	63.6 52.7	0	0.0	-333,197	0.0	-333,197	0.0	-333,197	0.0	-333,197	0.0
15	65.9 53.7	0	0.0	-182,411	0.0	-182,411	0.0	-182,411	0.0	-182,411	0.0
16	67.3 54.4	0	17.6	-52,299	0.0	-52,299	0.0	-52,299	0.0	-52,299	0.0
17	67.8 54.6	0	58.7	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4 54.8	0	58.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4 55.2	0	52.8	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7 56.0	0	44.1	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5 56.0	0	32.6	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0 54.1	0	19.2	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1 51.9	0	5.6	-142,118	0.0	-142,118	0.0	-142,118	0.0	-142,118	0.0
24	54.2 49.4	0	0.0	-318,442	0.0	-318,442	0.0	-318,442	0.0	-318,442	0.0

April		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0 56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9 54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0 53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4 52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2 51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5 50.9	0	0.0	-280,069	0.0	-280,069	0.0	-280,069	0.0	-280,069	0.0
7	53.2 51.1	0	0.0	-511,166	0.0	-511,166	0.0	-511,166	0.0	-511,166	0.0
8	53.9 51.5	0	0.0	-550,512	0.0	-550,512	0.0	-550,512	0.0	-550,512	0.0
9	55.9 52.1	0	0.0	-529,227	0.0	-529,227	0.0	-529,227	0.0	-529,227	0.0
10	58.9 53.2	0	0.0	-456,964	0.0	-456,964	0.0	-456,964	0.0	-456,964	0.0
11	62.6 55.2	0	0.0	-323,382	0.0	-323,382	0.0	-323,382	0.0	-323,382	0.0
12	66.5 57.3	0	0.0	-156,518	0.0	-156,518	0.0	-156,518	0.0	-156,518	0.0
13	70.2 59.6	0	17.7	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2 61.0	0	69.4	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2 62.2	0	85.5	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9 62.2	0	97.8	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6 62.0	0	102.4	0	1.2	0	1.2	0	1.2	0	1.2
18	74.9 61.7	0	105.0	0	41.8	0	41.8	0	41.8	0	41.8
19	73.7 62.0	0	99.9	0	39.7	0	39.7	0	39.7	0	39.7
20	72.1 62.4	0	89.5	0	36.5	0	36.5	0	36.5	0	36.5
21	70.2 63.3	0	78.5	0	31.3	0	31.3	0	31.3	0	31.3
22	68.0 62.5	0	63.4	0	23.5	0	23.5	0	23.5	0	23.5
23	65.7 60.5	0	50.2	0	12.8	0	12.8	0	12.8	0	12.8
24	63.4 58.5	0	40.4	0	1.1	0	1.1	0	1.1	0	1.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
VAV SYSTEMS

May Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	70.1	0	28.2	0	32.5	0	32.5	0	32.5
2	65.7	61.5	0	54.8	0	18.4	0	19.5	0	19.5	0	19.5
3	63.6	59.7	0	42.6	0	6.9	0	7.1	0	7.1	0	7.1
4	61.8	58.4	0	32.2	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	23.6	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	15.0	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	13.8	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	14.0	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	19.2	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	31.5	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	47.9	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	66.4	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	89.6	0	0.0	0	0.0	0	0.0	0	0.0
14	81.9	65.3	0	108.2	0	0.0	0	0.0	0	0.0	0	0.0
15	84.1	66.9	0	127.3	0	51.0	0	51.0	0	51.0	0	51.0
16	84.9	67.1	0	137.2	0	73.1	0	73.1	0	73.1	0	73.1
17	84.6	67.3	0	144.0	0	80.5	0	80.5	0	80.5	0	80.5
18	83.8	67.1	0	143.7	0	85.9	0	85.9	0	85.9	0	85.9
19	82.4	67.5	0	138.4	0	87.2	0	87.2	0	87.2	0	87.2
20	80.6	68.9	0	130.5	0	86.4	0	86.4	0	86.4	0	86.4
21	78.5	71.0	0	121.2	0	87.6	0	87.6	0	87.6	0	87.6
22	76.1	69.9	0	109.1	0	78.3	0	78.3	0	78.3	0	78.3
23	73.4	68.0	0	94.2	0	61.7	0	61.7	0	61.7	0	61.7
24	70.8	65.5	0	79.2	0	46.9	0	46.9	0	46.9	0	46.9

June Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	118.9	0	71.8	0	78.9	0	78.9	0	78.9
2	72.6	68.4	0	101.2	0	60.9	0	61.5	0	61.5	0	61.5
3	70.9	67.3	0	91.1	0	49.8	0	49.9	0	49.9	0	49.9
4	69.6	66.5	0	79.9	0	36.9	0	36.9	0	36.9	0	36.9
5	68.7	65.8	0	70.5	0	26.0	0	26.0	0	26.0	0	26.0
6	68.5	65.7	0	63.0	0	16.7	0	16.7	0	16.7	0	16.7
7	69.0	66.3	0	61.6	0	9.8	0	9.8	0	9.8	0	9.8
8	70.6	66.9	0	65.3	0	10.2	0	10.2	0	10.2	0	10.2
9	73.0	67.7	0	70.7	0	14.9	0	14.9	0	14.9	0	14.9
10	76.1	68.1	0	83.6	0	28.7	0	28.7	0	28.7	0	28.7
11	79.5	69.1	0	99.1	0	43.6	0	43.6	0	43.6	0	43.6
12	82.9	70.1	0	119.5	0	61.4	0	61.4	0	61.4	0	61.4
13	86.0	71.0	0	137.8	0	77.8	0	77.8	0	77.8	0	77.8
14	88.4	72.5	0	156.8	0	99.8	0	99.8	0	99.8	0	99.8
15	90.0	74.0	0	175.2	0	118.1	0	118.1	0	118.1	0	118.1
16	90.5	73.7	0	186.4	0	127.1	0	127.1	0	127.1	0	127.1
17	90.3	74.2	0	193.5	0	134.5	0	134.5	0	134.5	0	134.5
18	89.4	73.9	0	193.5	0	141.1	0	141.1	0	141.1	0	141.1
19	88.1	74.5	0	191.6	0	138.4	0	138.4	0	138.4	0	138.4
20	86.4	75.3	0	180.9	0	134.8	0	134.8	0	134.8	0	134.8
21	84.3	76.5	0	171.8	0	134.0	0	134.0	0	134.0	0	134.0
22	81.9	75.7	0	158.6	0	126.9	0	126.9	0	126.9	0	126.9
23	79.5	74.0	0	145.6	0	111.1	0	111.1	0	111.1	0	111.1
24	77.0	72.1	0	130.5	0	93.1	0	93.1	0	93.1	0	93.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
VAV SYSTEMS

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	118.6	0	61.2	0	67.7	0	67.7	0	67.7
2	72.4	69.4	0	98.8	0	52.6	0	53.4	0	53.4	0	53.4
3	71.3	68.4	0	89.2	0	41.3	0	41.4	0	41.4	0	41.4
4	70.5	67.7	0	81.4	0	30.3	0	30.3	0	30.3	0	30.3
5	70.0	67.4	0	72.6	0	22.7	0	22.7	0	22.7	0	22.7
6	69.9	67.5	0	65.7	0	12.5	0	12.5	0	12.5	0	12.5
7	70.3	68.0	0	65.5	0	6.9	0	6.9	0	6.9	0	6.9
8	71.7	69.0	0	65.9	0	7.3	0	7.3	0	7.3	0	7.3
9	73.7	69.5	0	70.2	0	12.6	0	12.6	0	12.6	0	12.6
10	76.2	70.6	0	79.8	0	28.5	0	28.5	0	28.5	0	28.5
11	78.9	71.8	0	96.7	0	44.9	0	44.9	0	44.9	0	44.9
12	81.4	73.0	0	116.2	0	66.7	0	66.7	0	66.7	0	66.7
13	83.4	74.4	0	136.1	0	86.7	0	86.7	0	86.7	0	86.7
14	84.8	74.8	0	155.8	0	100.2	0	100.2	0	100.2	0	100.2
15	85.2	75.0	0	170.9	0	115.0	0	115.0	0	115.0	0	115.0
16	85.1	75.0	0	182.8	0	123.6	0	123.6	0	123.6	0	123.6
17	84.6	74.7	0	191.8	0	131.0	0	131.0	0	131.0	0	131.0
18	83.8	74.6	0	189.9	0	131.6	0	131.6	0	131.6	0	131.6
19	82.7	74.6	0	185.8	0	133.2	0	133.2	0	133.2	0	133.2
20	81.4	74.4	0	178.1	0	129.1	0	129.1	0	129.1	0	129.1
21	79.9	74.9	0	166.6	0	121.6	0	121.6	0	121.6	0	121.6
22	78.4	74.0	0	151.8	0	108.8	0	108.8	0	108.8	0	108.8
23	76.8	72.7	0	139.8	0	93.9	0	93.9	0	93.9	0	93.9
24	75.2	71.6	0	128.1	0	80.7	0	80.7	0	80.7	0	80.7

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	114.6	0	66.8	0	74.4	0	74.4	0	74.4
2	73.2	70.3	0	94.4	0	56.3	0	56.9	0	56.9	0	56.9
3	71.7	68.9	0	83.4	0	44.8	0	44.9	0	44.9	0	44.9
4	70.4	67.8	0	75.3	0	35.1	0	35.1	0	35.1	0	35.1
5	69.5	66.8	0	64.3	0	23.2	0	23.2	0	23.2	0	23.2
6	68.9	66.4	0	58.2	0	11.6	0	11.6	0	11.6	0	11.6
7	68.7	66.4	0	56.4	0	4.1	0	4.1	0	4.1	0	4.1
8	69.2	66.8	0	57.7	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	64.6	0	1.0	0	1.0	0	1.0	0	1.0
10	73.2	67.7	0	75.8	0	12.3	0	12.3	0	12.3	0	12.3
11	76.2	68.8	0	90.6	0	29.8	0	29.8	0	29.8	0	29.8
12	79.3	70.3	0	109.4	0	51.4	0	51.4	0	51.4	0	51.4
13	82.3	72.2	0	131.1	0	74.2	0	74.2	0	74.2	0	74.2
14	84.7	73.7	0	152.5	0	93.4	0	93.4	0	93.4	0	93.4
15	86.3	74.6	0	168.6	0	110.1	0	110.1	0	110.1	0	110.1
16	86.8	75.1	0	180.2	0	123.2	0	123.2	0	123.2	0	123.2
17	86.6	75.1	0	185.0	0	128.6	0	128.6	0	128.6	0	128.6
18	86.0	75.3	0	184.3	0	137.6	0	137.6	0	137.6	0	137.6
19	85.1	76.0	0	180.6	0	137.8	0	137.8	0	137.8	0	137.8
20	83.8	76.8	0	172.4	0	133.3	0	133.3	0	133.3	0	133.3
21	82.3	77.2	0	163.8	0	127.9	0	127.9	0	127.9	0	127.9
22	80.6	76.3	0	147.9	0	120.5	0	120.5	0	120.5	0	120.5
23	78.7	75.3	0	133.7	0	104.2	0	104.2	0	104.2	0	104.2
24	76.8	73.7	0	123.0	0	89.1	0	89.1	0	89.1	0	89.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
VAV SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	74.4	0	25.6	0	30.8	0	30.8	0	30.8
2	67.6	65.0	0	55.1	0	15.2	0	16.4	0	16.4	0	16.4
3	65.8	63.4	0	43.2	0	4.6	0	4.8	0	4.8	0	4.8
4	64.3	62.2	0	34.1	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	25.4	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	20.9	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	17.2	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	17.5	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	23.5	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	36.1	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	49.7	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	67.8	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	88.8	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	109.2	0	0.0	0	0.0	0	0.0	0	0.0
15	83.0	70.0	0	126.1	0	44.6	0	44.6	0	44.6	0	44.6
16	83.7	70.5	0	138.1	0	80.0	0	80.1	0	80.1	0	80.1
17	83.4	70.5	0	141.9	0	82.8	0	82.8	0	82.8	0	82.8
18	82.8	70.9	0	140.7	0	88.6	0	88.6	0	88.6	0	88.6
19	81.6	72.7	0	138.2	0	89.1	0	89.1	0	89.1	0	89.1
20	80.1	74.7	0	132.9	0	91.1	0	91.1	0	91.1	0	91.1
21	78.3	74.1	0	121.8	0	83.7	0	83.7	0	83.7	0	83.7
22	76.3	72.4	0	104.8	0	72.9	0	72.9	0	72.9	0	72.9
23	74.1	70.7	0	89.5	0	58.0	0	58.0	0	58.0	0	58.0
24	71.8	68.9	0	76.8	0	45.0	0	45.0	0	45.0	0	45.0

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-421,460	0.0	-421,460	0.0	-421,460	0.0
2	50.1	48.6	0	0.0	0	0.0	-532,131	0.0	-532,131	0.0	-532,131	0.0
3	48.4	46.9	0	0.0	-358,280	0.0	-612,189	0.0	-612,189	0.0	-612,189	0.0
4	47.1	45.8	0	0.0	-722,526	0.0	-722,522	0.0	-722,522	0.0	-722,522	0.0
5	46.3	44.8	-139,007	0.0	-791,815	0.0	-791,815	0.0	-791,815	0.0	-791,815	0.0
6	46.0	44.5	-489,027	0.0	-868,938	0.0	-868,938	0.0	-868,938	0.0	-868,938	0.0
7	46.8	45.3	-521,342	0.0	-907,926	0.0	-907,926	0.0	-907,926	0.0	-907,926	0.0
8	48.9	47.5	-519,277	0.0	-921,756	0.0	-921,756	0.0	-921,756	0.0	-921,756	0.0
9	52.2	49.9	-446,560	0.0	-892,886	0.0	-892,886	0.0	-892,886	0.0	-892,886	0.0
10	56.2	52.5	-333,793	0.0	-799,773	0.0	-799,773	0.0	-799,773	0.0	-799,773	0.0
11	60.4	54.4	-174,941	0.0	-676,803	0.0	-676,803	0.0	-676,803	0.0	-676,803	0.0
12	64.4	56.0	0	0.0	-513,105	0.0	-513,105	0.0	-513,105	0.0	-513,105	0.0
13	67.7	57.3	0	0.0	-335,494	0.0	-335,494	0.0	-335,494	0.0	-335,494	0.0
14	69.8	58.2	0	0.0	-147,037	0.0	-147,037	0.0	-147,037	0.0	-147,037	0.0
15	70.6	58.1	0	0.0	-11,935	0.0	-11,935	0.0	-11,935	0.0	-11,935	0.0
16	70.3	57.5	0	36.3	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	56.6	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	55.4	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	48.1	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	37.6	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	26.3	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	15.5	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	-301,490	0.0	-301,490	0.0	-301,490	0.0	-301,490	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
VAV SYSTEMS

November		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0 49.2	-243,335	0.0	0	0.0	-535,161	0.0	-535,161	0.0	-535,161	0.0
2	49.4 47.3	-357,259	0.0	-273,103	0.0	-632,262	0.0	-632,262	0.0	-632,262	0.0
3	47.2 45.3	-445,018	0.0	-721,814	0.0	-721,814	0.0	-721,814	0.0	-721,814	0.0
4	45.3 43.4	-538,165	0.0	-817,836	0.0	-817,836	0.0	-817,836	0.0	-817,836	0.0
5	43.9 42.2	-610,530	0.0	-893,155	0.0	-893,155	0.0	-893,155	0.0	-893,155	0.0
6	43.0 41.4	-666,297	0.0	-962,628	0.0	-962,628	0.0	-962,628	0.0	-962,628	0.0
7	42.7 41.2	-698,585	0.0	-1,032,899	0.0	-1,032,899	0.0	-1,032,899	0.0	-1,032,899	0.0
8	43.5 42.0	-704,286	0.0	-1,073,998	0.0	-1,073,998	0.0	-1,073,998	0.0	-1,073,998	0.0
9	45.9 44.0	-645,007	0.0	-1,075,670	0.0	-1,075,670	0.0	-1,075,670	0.0	-1,075,670	0.0
10	49.4 46.6	-523,422	0.0	-1,021,258	0.0	-1,021,258	0.0	-1,021,258	0.0	-1,021,258	0.0
11	53.8 48.6	-374,423	0.0	-925,778	0.0	-925,778	0.0	-925,778	0.0	-925,778	0.0
12	58.4 50.6	-193,772	0.0	-781,417	0.0	-781,417	0.0	-781,417	0.0	-781,417	0.0
13	62.8 52.6	0	0.0	-611,892	0.0	-611,892	0.0	-611,892	0.0	-611,892	0.0
14	66.3 54.5	0	0.0	-428,365	0.0	-428,365	0.0	-428,365	0.0	-428,365	0.0
15	68.7 55.7	0	0.0	-276,394	0.0	-276,394	0.0	-276,394	0.0	-276,394	0.0
16	69.5 56.1	0	0.0	-154,413	0.0	-154,413	0.0	-154,413	0.0	-154,413	0.0
17	69.2 55.8	0	2.3	-114,328	0.0	-114,328	0.0	-114,328	0.0	-114,328	0.0
18	68.3 57.0	0	32.2	-80,515	0.0	-80,515	0.0	-80,515	0.0	-80,515	0.0
19	66.9 59.4	0	25.1	-101,056	0.0	-101,056	0.0	-101,056	0.0	-101,056	0.0
20	65.0 59.4	0	16.0	-148,580	0.0	-148,580	0.0	-148,580	0.0	-148,580	0.0
21	62.8 58.2	0	5.4	-199,109	0.0	-199,109	0.0	-199,109	0.0	-199,109	0.0
22	60.2 56.1	0	0.0	-265,332	0.0	-265,332	0.0	-265,332	0.0	-265,332	0.0
23	57.5 54.0	0	0.0	-350,727	0.0	-350,727	0.0	-350,727	0.0	-350,727	0.0
24	54.7 51.7	0	0.0	-450,522	0.0	-450,522	0.0	-450,522	0.0	-450,522	0.0

December		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9 42.5	-561,202	0.0	-900,943	0.0	-900,943	0.0	-900,943	0.0	-900,943	0.0
2	43.2 41.1	-637,234	0.0	-986,082	0.0	-986,082	0.0	-986,082	0.0	-986,082	0.0
3	41.8 39.8	-719,583	0.0	-1,060,684	0.0	-1,060,684	0.0	-1,060,684	0.0	-1,060,684	0.0
4	40.7 38.7	-787,214	0.0	-1,120,374	0.0	-1,120,374	0.0	-1,120,374	0.0	-1,120,374	0.0
5	40.1 38.4	-859,579	0.0	-1,184,259	0.0	-1,184,259	0.0	-1,184,259	0.0	-1,184,259	0.0
6	39.9 38.4	-906,581	0.0	-1,242,622	0.0	-1,242,622	0.0	-1,242,622	0.0	-1,242,622	0.0
7	40.5 39.0	-922,361	0.0	-1,292,465	0.0	-1,292,465	0.0	-1,292,465	0.0	-1,292,465	0.0
8	42.2 40.7	-945,031	0.0	-1,299,394	0.0	-1,299,394	0.0	-1,299,394	0.0	-1,299,394	0.0
9	44.9 43.4	-905,541	0.0	-1,276,195	0.0	-1,276,195	0.0	-1,276,195	0.0	-1,276,195	0.0
10	48.2 45.8	-832,941	0.0	-1,213,587	0.0	-1,213,587	0.0	-1,213,587	0.0	-1,213,587	0.0
11	51.7 48.3	-701,654	0.0	-1,136,982	0.0	-1,136,982	0.0	-1,136,982	0.0	-1,136,982	0.0
12	55.0 50.7	-528,178	0.0	-996,962	0.0	-996,962	0.0	-996,962	0.0	-996,962	0.0
13	57.7 52.0	-374,142	0.0	-874,350	0.0	-874,350	0.0	-874,350	0.0	-874,350	0.0
14	59.5 52.6	-192,201	0.0	-720,390	0.0	-720,390	0.0	-720,390	0.0	-720,390	0.0
15	60.1 52.7	-42,732	0.0	-613,079	0.0	-613,079	0.0	-613,079	0.0	-613,079	0.0
16	59.9 52.6	0	0.0	-525,110	0.0	-525,110	0.0	-525,110	0.0	-525,110	0.0
17	59.2 52.1	0	0.0	-469,036	0.0	-469,036	0.0	-469,036	0.0	-469,036	0.0
18	58.2 51.8	0	0.0	-455,198	0.0	-455,198	0.0	-455,198	0.0	-455,198	0.0
19	56.8 52.2	0	0.0	-474,131	0.0	-474,131	0.0	-474,131	0.0	-474,131	0.0
20	55.0 51.4	0	0.0	-519,433	0.0	-519,433	0.0	-519,433	0.0	-519,433	0.0
21	53.1 50.1	0	0.0	-585,274	0.0	-585,274	0.0	-585,274	0.0	-585,274	0.0
22	51.0 48.1	-263,876	0.0	-644,570	0.0	-644,570	0.0	-644,570	0.0	-644,570	0.0
23	48.9 46.2	-359,101	0.0	-736,228	0.0	-736,228	0.0	-736,228	0.0	-736,228	0.0
24	46.9 44.1	-462,450	0.0	-812,380	0.0	-812,380	0.0	-812,380	0.0	-812,380	0.0

01 Card - Job Information

 Project: ACADEMIC TRAINING BUILDING
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 24701 (1 BUILDING)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETO-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	CLASSROOMS

-----CARD 20-- General Room Parameters-----

Room	Zone										
Number	Reference	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
	Number	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
							Resistance	Height	Multiplier	Zone	
1	1	BLOCK	327	124	3	0		13	2		

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag		Average	Floor
1		50		CLGCONST				HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Roof	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Equal to Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				17			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Constuc	Type	Direction	Tilt	Alpha	Reflectance Multiplier
1	1	292.5	13.5		178	0				
1	2	124	13.5		178	90				
1	3	292.5	13.5		178	180				
1	4	124	13.5		178	270				
1	5	55	13.5		178	180				
1	6	52	13.6		178	270				
1	7	55	13.6		178	0				
1	8	52	13.6		178	90				
1	9	55	13.6		178	180				
1	10	52	13.6		178	270				
1	11	55	13.6		178	0				
1	12	52	13.6		178	90				

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of	U-Value	Coefficient	Shading	Shading	Solar to	Transmittance	Visible
				Windows			Type	Type	Ret. Air		Reflectance
1	1	3	5	10	1.03	.82					
1	2	2	5	8	1.03	.82					
1	3	3	5	10	1.03	.82					
1	4	2	5	8	1.03	.82					
1	5	11.5	10	1	1.03	.82					
1	6	4.2	10	1	1.03	.82					
1	7	11.5	10	1	1.03	.82					
1	8	4.2	10	1	1.03	.82					
1	9	11.5	10	1	1.03	.82					
1	10	4.2	10	1	1.03	.82					
1	11	11.5	10	1	1.03	.82					
1	12	4.2	10	1	1.03	.82					

-----CARD 26--- Schedules -----

Room	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27--- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Ballast	Percent	--- Daylighting ---
Number	Value	Units	Sensible	Latent	Value	Units	Fixture Type	Factor	Lights to Ret. Air	Reference Point 1 Reference Point 2
1	428	PEOPLE	255	325	1.7	WATT-SF	ASHRAE2			

-----CARD 28--- Miscellaneous Equipment -----

Room	Misc	Equipment	Equipment	Energy	Energy	Energy	Percent	Percent	Percent		
Number	Number	Descrip		Consump	Consump	Schedule	of Load	Misc. Load	Misc. Sens	Radiant	Optional
				Value	Units	Code	Sensible	to Room	to Ret. Air	Fraction	Air Path
1	1	MISS.		136	KW	FGHEAT					

-----CARD 29--- Room Airflows -----

Room	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
Number	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
Number	Value	Units	Value	Units	Value	Units	Value	Units		
1	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	VAV SYSTEMS

-----CARD 40--- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----						
System	Set	System	Ventil	Cooling	Heating	Fan
Number	Type	Location	SADBVh	SADBVh	Schedule	Static Pressure
1	SZ					

[illegible][illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

FGHEAT SCHD FOR HEAT LOAD CALCS

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

YES AVAILABLE (100%)

System:

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST

Project: SAMPLE HEATING TSTAT SCHEDULE

Location: SAMPLE

Client:

Program User:

Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

----	-----
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		100
24		

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*****  
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**  
**          TRACE 600 ANALYSIS          **  
**  
**          by          **  
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ACADEMIC TRAINING BUILDING
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 24801 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 13:59:21 8/19/94
Dataset Name: FGTYP511 .TM

1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==>					Mo/Hr: 6/17					Mo/Hr: 6/18					Mo/Hr: 13/ 1				
Outside Air ==>					OADB/WB/HR: 98/ 74/ 91.0					OADB: 96					OADB: 23				
Space					Ret. Air					Ret. Air					Net				
Sens.+Lat.					Sensible					Latent					Total				
(Btuh)					(Btuh)					(Btuh)					Of Tot				
Envelope Loads															Of Tot				
Skylite Solr					0					0					0.00				
Skylite Cond					0					0					0.00				
Roof Cond					1,330,605					0					45.11				
Glass Solar					89,216					0					3.02				
Glass Cond					49,532					0					1.68				
Wall Cond					853,680					0					28.94				
Partition					0					0					0.00				
Exposed Floor					0					0					0.00				
Infiltration					119,281					0					4.04				
Sub Total==>					2,442,315					0					82.80				
Internal Loads																			
Lights					0					0					0.00				
People					0					0					0.00				
Misc					0					0					0.00				
Sub Total==>					0					0					0.00				
Ceiling Load					0					0					0.00				
Outside Air					0					0					0.00				
Fan Heat					0					0					0.00				
Ret. Fan Heat					0					0					0.00				
Duct Heat Pkup					0					0					0.00				
OV/UNDR Sizing					0					0					0.00				
Exhaust Heat					0					0					0.00				
Terminal Bypass					0					0					-0.00				
Grand Total==>					2,442,315					0					100.00				

-----COOLING COIL SELECTION-----										-----AREAS-----			
Total Capacity		Sens Cap.		Coil Airfl		Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	
(Tons)	(Mbh)	(Mbh)	(Mbh)	(cfm)		Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	81,096
Main Clg	245.8	2,949.6	2,692.1	147,200		76.8	63.6	67.3	59.9	57.1	65.4	Part	0
Aux Clg	0.0	0.0	0.0	0		0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0		0.0	0.0	0.0	0.0	0.0	0.0	Roof	40,548
Totals	245.8	2,949.6										Wall	34,122

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----					-----ENGINEERING CHECKS-----			-----TEMPERATURES (F)-----		
Capacity		Coil Airfl		Ent		Lvg		Type		Cooling		Heating		Clg % OA	
(Mbh)	(Mbh)	(cfm)	(cfm)	Deg F	Deg F	Deg F	Deg F	Vent						Type	Clg
Main Htg	-2,772.4	147,200	64.5	81.4				Infil	11,610	11,610				SAOB	59.9
Aux Htg	0.0	0	0.0	0.0				Supply	2,730	3,412				Plenum	75.0
Preheat	-0.0	147,200	64.5	59.9				Mincfm	147,200	147,200				Return	75.0
Reheat	0.0	0	0.0	0.0				Return	0	0				Ret/OA	76.8
Humidif	0.0	0	0.0	0.0				Exhaust	147,200	147,200				Runarnd	75.0
0.0	0.0	0	0.0	0.0				Rm Exh	11,610	11,610				Fn MtrTD	0.0
Totals	-2,772.4							Auxil	0	0				Fn BldTD	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MONTHLY SUMMERS

May	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	61.6	0	24.4	0	28.1	0	28.1
2	65.7	61.5	0	49.4	0	11.5	0	12.5	0	12.5
3	63.6	59.7	0	35.2	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	22.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	11.6	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	2.7	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	2.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	8.7	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	24.1	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	43.6	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	69.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	93.5	0	2.7	0	2.7	0	2.7
13	78.5	63.7	0	121.7	0	6.3	0	6.3	0	6.3
14	81.9	65.3	0	145.2	0	8.9	0	8.9	0	8.9
15	84.1	66.9	0	167.7	0	67.4	0	67.5	0	67.5
16	84.9	67.1	0	183.0	0	97.5	0	97.5	0	97.5
17	84.6	67.3	0	190.0	0	105.7	0	105.7	0	105.7
18	83.8	67.1	0	189.7	0	113.9	0	113.9	0	113.9
19	82.4	67.5	0	181.9	0	114.5	0	114.5	0	114.5
20	80.6	68.9	0	165.4	0	108.6	0	108.6	0	108.6
21	78.5	71.0	0	145.1	0	102.5	0	102.5	0	102.5
22	76.1	69.9	0	123.7	0	87.3	0	87.3	0	87.3
23	73.4	68.0	0	101.6	0	65.5	0	65.5	0	65.5
24	70.8	65.5	0	81.1	0	48.6	0	48.6	0	48.6

June	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	124.1	0	72.6	0	80.1	0	80.1
2	72.6	68.4	0	102.3	0	56.7	0	58.0	0	58.0
3	70.9	67.3	0	88.9	0	43.0	0	43.3	0	43.3
4	69.6	66.5	0	77.9	0	28.5	0	28.6	0	28.6
5	68.7	65.8	0	65.3	0	13.9	0	13.9	0	13.9
6	68.5	65.7	0	57.9	0	2.8	0	2.8	0	2.8
7	69.0	66.3	0	56.9	0	0.0	0	0.0	0	0.0
8	70.6	66.9	0	68.4	0	0.0	0	0.0	0	0.0
9	73.0	67.7	0	85.6	0	17.7	0	17.7	0	17.7
10	76.1	68.1	0	105.5	0	40.7	0	40.7	0	40.7
11	79.5	69.1	0	126.6	0	60.3	0	60.3	0	60.3
12	82.9	70.1	0	152.7	0	81.7	0	81.7	0	81.7
13	86.0	71.0	0	175.3	0	99.3	0	99.3	0	99.3
14	88.4	72.5	0	198.5	0	121.7	0	121.7	0	121.7
15	90.0	74.0	0	218.4	0	142.5	0	142.5	0	142.5
16	90.5	73.7	0	234.6	0	154.5	0	154.5	0	154.5
17	90.3	74.2	0	243.8	0	164.2	0	164.2	0	164.2
18	89.4	73.9	0	244.1	0	171.9	0	171.9	0	171.9
19	88.1	74.5	0	235.8	0	168.2	0	168.2	0	168.2
20	86.4	75.3	0	221.0	0	161.7	0	161.7	0	161.7
21	84.3	76.5	0	200.7	0	153.4	0	153.4	0	153.4
22	81.9	75.7	0	177.5	0	140.3	0	140.3	0	140.3
23	79.5	74.0	0	157.0	0	119.7	0	119.7	0	119.7
24	77.0	72.1	0	137.3	0	97.6	0	97.6	0	97.6

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MONTHLY SYSTEMS

July	----- Design -----				----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5		0	121.5		0	59.1		0	65.8		0	65.8		0	65.8	
2	72.4	69.4		0	99.6		0	46.9		0	48.3		0	48.3		0	48.3	
3	71.3	68.4		0	88.6		0	32.9		0	33.3		0	33.3		0	33.3	
4	70.5	67.7		0	77.6		0	21.0		0	21.1		0	21.1		0	21.1	
5	70.0	67.4		0	69.1		0	8.8		0	8.8		0	8.8		0	8.8	
6	69.9	67.5		0	63.4		0	0.0		0	0.0		0	0.0		0	0.0	
7	70.3	68.0		0	63.6		0	0.0		0	0.0		0	0.0		0	0.0	
8	71.7	69.0		0	69.7		0	0.0		0	0.0		0	0.0		0	0.0	
9	73.7	69.5		0	84.1		0	9.8		0	9.8		0	9.8		0	9.8	
10	76.2	70.6		0	101.5		0	47.2		0	47.2		0	47.2		0	47.2	
11	78.9	71.8		0	124.2		0	67.1		0	67.1		0	67.1		0	67.1	
12	81.4	73.0		0	150.2		0	89.6		0	89.6		0	89.6		0	89.6	
13	83.4	74.4		0	173.9		0	109.2		0	109.2		0	109.2		0	109.2	
14	84.8	74.8		0	194.4		0	124.4		0	124.4		0	124.4		0	124.4	
15	85.2	75.0		0	212.3		0	141.6		0	141.6		0	141.6		0	141.6	
16	85.1	75.0		0	226.8		0	151.2		0	151.2		0	151.2		0	151.2	
17	84.6	74.7		0	236.8		0	159.5		0	159.5		0	159.5		0	159.5	
18	83.8	74.6		0	234.0		0	159.0		0	159.0		0	159.0		0	159.0	
19	82.7	74.6		0	226.8		0	156.7		0	156.7		0	156.7		0	156.7	
20	81.4	74.4		0	212.7		0	150.2		0	150.2		0	150.2		0	150.2	
21	79.9	74.9		0	191.6		0	134.0		0	134.0		0	134.0		0	134.0	
22	78.4	74.0		0	169.3		0	115.3		0	115.3		0	115.3		0	115.3	
23	76.8	72.7		0	149.7		0	98.5		0	98.5		0	98.5		0	98.5	
24	75.2	71.6		0	132.4		0	81.2		0	81.2		0	81.2		0	81.2	

August	----- Design -----				----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0	118.2		0	65.0		0	73.2		0	73.2		0	73.2	
2	73.2	70.3		0	94.5		0	51.7		0	53.2		0	53.2		0	53.2	
3	71.7	68.9		0	80.9		0	37.3		0	37.6		0	37.6		0	37.6	
4	70.4	67.8		0	71.9		0	27.1		0	27.2		0	27.2		0	27.2	
5	69.5	66.8		0	61.6		0	11.1		0	11.1		0	11.1		0	11.1	
6	68.9	66.4		0	53.8		0	0.0		0	0.0		0	0.0		0	0.0	
7	68.7	66.4		0	50.5		0	0.0		0	0.0		0	0.0		0	0.0	
8	69.2	66.8		0	57.3		0	0.0		0	0.0		0	0.0		0	0.0	
9	70.8	67.7		0	74.6		0	0.0		0	0.0		0	0.0		0	0.0	
10	73.2	67.7		0	95.8		0	3.9		0	3.9		0	3.9		0	3.9	
11	76.2	68.8		0	119.7		0	53.2		0	53.2		0	53.2		0	53.2	
12	79.3	70.3		0	143.4		0	73.9		0	73.9		0	73.9		0	73.9	
13	82.3	72.2		0	170.8		0	97.6		0	97.6		0	97.6		0	97.6	
14	84.7	73.7		0	194.1		0	117.7		0	117.7		0	117.7		0	117.7	
15	86.3	74.6		0	213.7		0	139.0		0	139.0		0	139.0		0	139.0	
16	86.8	75.1		0	230.2		0	154.6		0	154.6		0	154.6		0	154.6	
17	86.6	75.1		0	235.5		0	160.9		0	160.9		0	160.9		0	160.9	
18	86.0	75.3		0	231.9		0	166.8		0	166.8		0	166.8		0	166.8	
19	85.1	76.0		0	223.7		0	164.4		0	164.4		0	164.4		0	164.4	
20	83.8	76.8		0	204.9		0	151.9		0	151.9		0	151.9		0	151.9	
21	82.3	77.2		0	185.2		0	141.3		0	141.3		0	141.3		0	141.3	
22	80.6	76.3		0	163.0		0	129.2		0	129.2		0	129.2		0	129.2	
23	78.7	75.3		0	143.0		0	107.4		0	107.4		0	107.4		0	107.4	
24	76.8	73.7		0	127.5		0	90.4		0	90.4		0	90.4		0	90.4	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MECHANICAL SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	71.6	0	20.8	0	25.4	0	25.4	0	25.4
2	67.6	65.0	0	49.8	0	6.8	0	7.6	0	7.6	0	7.6
3	65.8	63.4	0	36.0	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	25.8	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	14.9	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	9.1	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	6.8	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	9.7	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	24.3	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	51.2	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	76.2	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	103.2	0	4.4	0	4.4	0	4.4	0	4.4
13	78.3	66.7	0	129.5	0	8.2	0	8.2	0	8.2	0	8.2
14	81.2	68.4	0	153.2	0	10.8	0	10.9	0	10.9	0	10.9
15	83.0	70.0	0	175.5	0	92.3	0	92.6	0	92.6	0	92.6
16	83.7	70.5	0	189.3	0	108.8	0	108.8	0	108.8	0	108.8
17	83.4	70.5	0	194.3	0	115.7	0	115.7	0	115.7	0	115.7
18	82.8	70.9	0	189.4	0	119.2	0	119.2	0	119.2	0	119.2
19	81.6	72.7	0	177.5	0	114.7	0	114.7	0	114.7	0	114.7
20	80.1	74.7	0	159.6	0	106.2	0	106.2	0	106.2	0	106.2
21	78.3	74.1	0	139.3	0	93.1	0	93.1	0	93.1	0	93.1
22	76.3	72.4	0	115.5	0	79.1	0	79.1	0	79.1	0	79.1
23	74.1	70.7	0	93.1	0	60.7	0	60.7	0	60.7	0	60.7
24	71.8	68.9	0	77.7	0	42.6	0	42.6	0	42.6	0	42.6

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-92,824	0.0	-444,855	0.0	-445,025	0.0	-445,025	0.0
2	50.1	48.6	0	0.0	-381,007	7.5	-612,010	0.0	-612,120	0.0	-612,120	0.0
3	48.4	46.9	0	0.0	-619,808	0.0	-743,860	0.0	-743,931	0.0	-743,931	0.0
4	47.1	45.8	-168,756	0.0	-769,089	0.0	-848,915	0.0	-848,961	0.0	-848,961	0.0
5	46.3	44.8	-298,887	0.0	-876,617	0.0	-927,972	0.0	-928,002	0.0	-928,002	0.0
6	46.0	44.5	-363,606	0.0	-947,111	0.0	-980,142	0.0	-980,162	0.0	-980,162	0.0
7	46.8	45.3	-372,343	0.0	-951,729	0.0	-972,967	0.0	-972,980	0.0	-972,980	0.0
8	48.9	47.5	-320,063	0.0	-887,273	0.0	-900,930	0.0	-900,939	0.0	-900,939	0.0
9	52.2	49.9	-193,346	0.0	-753,389	0.0	-762,172	0.0	-762,179	0.0	-762,179	0.0
10	56.2	52.5	0	0.0	-567,322	0.0	-572,968	0.0	-572,971	0.0	-572,971	0.0
11	60.4	54.4	0	0.0	-356,587	0.0	-360,214	0.0	-360,215	0.0	-360,215	0.0
12	64.4	56.0	0	0.0	-141,425	0.0	-143,754	0.0	-143,756	0.0	-143,756	0.0
13	67.7	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	8.3	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	7.2	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	97.3	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	100.8	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	92.6	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	73.4	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	51.1	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	29.7	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	12.5	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.0	-15,514	0.0	-16,022	0.0	-16,022	0.0	-16,022	0.0
24	54.5	52.7	0	0.0	-252,672	0.0	-252,936	0.0	-252,936	0.0	-252,936	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
 SYSTEMS

November		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	52.0	49.2	-233,501	0.0		-255,430	0.0			-641,835	0.0			-641,926	0.0			-641,926	0.0		
2	49.4	47.3	-363,692	0.0		-539,295	0.0			-789,011	0.0			-789,070	0.0			-789,070	0.0		
3	47.2	45.3	-476,323	0.0		-752,308	0.0			-912,953	0.0			-912,989	0.0			-912,989	0.0		
4	45.3	43.4	-569,500	0.0		-920,504	0.0			-1,023,838	0.0			-1,023,863	0.0			-1,023,863	0.0		
5	43.9	42.2	-635,996	0.0		-1,042,463	0.0			-1,108,931	0.0			-1,108,946	0.0			-1,108,946	0.0		
6	43.0	41.4	-651,784	0.0		-1,129,705	0.0			-1,172,463	0.0			-1,172,473	0.0			-1,172,473	0.0		
7	42.7	41.2	-630,829	0.0		-1,181,565	0.0			-1,209,070	0.0			-1,209,075	0.0			-1,209,075	0.0		
8	43.5	42.0	-552,479	0.0		-1,173,526	0.0			-1,191,218	0.0			-1,191,220	0.0			-1,191,220	0.0		
9	45.9	44.0	-411,017	0.0		-1,080,747	0.0			-1,092,128	0.0			-1,092,128	0.0			-1,092,128	0.0		
10	49.4	46.6	-222,308	0.0		-921,703	0.0			-929,020	0.0			-929,022	0.0			-929,022	0.0		
11	53.8	48.6	0	0.0		-697,863	0.0			-702,565	0.0			-702,567	0.0			-702,567	0.0		
12	58.4	50.6	0	0.0		-454,474	0.0			-457,492	0.0			-457,494	0.0			-457,494	0.0		
13	62.8	52.6	0	0.0		-216,288	0.0			-218,226	0.0			-218,226	0.0			-218,226	0.0		
14	66.3	54.5	0	0.0		-22,613	0.0			-23,855	0.0			-23,855	0.0			-23,855	0.0		
15	68.7	55.7	0	8.0		0	0.0			0	0.0			0	0.0			0	0.0		
16	69.5	56.1	0	5.3		0	0.0			0	0.0			0	0.0			0	0.0		
17	69.2	55.8	0	73.4		0	0.0			0	0.0			0	0.0			0	0.0		
18	68.3	57.0	0	66.4		0	0.0			0	0.0			0	0.0			0	0.0		
19	66.9	59.4	0	46.8		0	0.0			0	0.0			0	0.0			0	0.0		
20	65.0	59.4	0	27.7		0	0.0			0	0.0			0	0.0			0	0.0		
21	62.8	58.2	0	8.0		0	0.0			0	0.0			0	0.0			0	0.0		
22	60.2	56.1	0	0.0		-125,037	0.0			-125,377	0.0			-125,377	0.0			-125,377	0.0		
23	57.5	54.0	0	0.0		-306,596	0.0			-306,817	0.0			-306,817	0.0			-306,817	0.0		
24	54.7	51.7	0	0.0		-481,375	0.0			-481,515	0.0			-481,515	0.0			-481,515	0.0		

December		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	44.9	42.5	-659,174	0.0		-960,488	0.0			-1,078,997	0.0			-1,079,002	0.0			-1,079,002	0.0		
2	43.2	41.1	-736,936	0.0		-1,106,867	0.0			-1,183,046	0.0			-1,183,049	0.0			-1,183,049	0.0		
3	41.8	39.8	-807,130	0.0		-1,224,277	0.0			-1,273,244	0.0			-1,273,245	0.0			-1,273,245	0.0		
4	40.7	38.7	-869,857	0.0		-1,316,824	0.0			-1,348,307	0.0			-1,348,307	0.0			-1,348,307	0.0		
5	40.1	38.4	-920,262	0.0		-1,376,410	0.0			-1,396,650	0.0			-1,396,651	0.0			-1,396,651	0.0		
6	39.9	38.4	-928,297	0.0		-1,415,521	0.0			-1,428,534	0.0			-1,428,536	0.0			-1,428,536	0.0		
7	40.5	39.0	-912,046	0.0		-1,415,740	0.0			-1,424,109	0.0			-1,424,109	0.0			-1,424,109	0.0		
8	42.2	40.7	-854,541	0.0		-1,363,750	0.0			-1,369,127	0.0			-1,369,127	0.0			-1,369,127	0.0		
9	44.9	43.4	-753,704	0.0		-1,259,421	0.0			-1,262,881	0.0			-1,262,881	0.0			-1,262,881	0.0		
10	48.2	45.8	-615,012	0.0		-1,114,722	0.0			-1,116,946	0.0			-1,116,946	0.0			-1,116,946	0.0		
11	51.7	48.3	-416,440	0.0		-943,459	0.0			-944,885	0.0			-944,885	0.0			-944,885	0.0		
12	55.0	50.7	-205,650	0.0		-763,777	0.0			-764,693	0.0			-764,693	0.0			-764,693	0.0		
13	57.7	52.0	-20,131	0.0		-600,895	0.0			-601,485	0.0			-601,485	0.0			-601,485	0.0		
14	59.5	52.6	0	0.0		-472,509	0.0			-472,886	0.0			-472,886	0.0			-472,886	0.0		
15	60.1	52.7	0	0.0		-395,434	0.0			-395,677	0.0			-395,677	0.0			-395,677	0.0		
16	59.9	52.6	0	0.0		-349,621	0.0			-349,775	0.0			-349,775	0.0			-349,775	0.0		
17	59.2	52.1	0	0.0		-324,956	0.0			-325,057	0.0			-325,057	0.0			-325,057	0.0		
18	58.2	51.8	0	0.0		-326,682	0.0			-326,747	0.0			-326,747	0.0			-326,747	0.0		
19	56.8	52.2	0	0.0		-377,186	0.0			-377,225	0.0			-377,225	0.0			-377,225	0.0		
20	55.0	51.4	0	0.0		-473,683	0.0			-473,712	0.0			-473,712	0.0			-473,712	0.0		
21	53.1	50.1	0	0.0		-586,400	0.0			-586,416	0.0			-586,416	0.0			-586,416	0.0		
22	51.0	48.1	-60,850	0.0		-712,777	0.0			-712,788	0.0			-712,788	0.0			-712,788	0.0		
23	48.9	46.2	-253,795	0.0		-838,916	0.0			-838,922	0.0			-838,922	0.0			-838,922	0.0		
24	46.9	44.1	-405,757	0.0		-958,783	0.0			-958,788	0.0			-958,788	0.0			-958,788	0.0		

1 Card - Job Information

Project: ACADEMIC TRAINING BUILDING
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 24801 (1 BUILDING)

----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	DIXON HALL

----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	327	124	3	0		13	2		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs	Carpet On Average Floor
		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
	1	YES				17			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	292.5	13.5		16	0			
1	2	124	13.5		15	90			
1	3	292.5	13.5		15	180			
1	4	124	13.5		15	270			
1	5	55	13.5		15	180			
1	6	52	13.6		15	270			
1	7	55	13.6		15	0			
1	8	52	13.6		15	90			
1	9	55	13.6		15	180			
1	10	52	13.6		15	270			
1	11	55	13.6		15	0			
1	12	52	13.6		15	90			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	3	5	10	1.03	.82					
1	2	2	5	8	1.03	.82					
1	3	3	5	10	1.03	.82					
1	4	2	5	8	1.03	.82					
1	5	11.5	10	1	1.03	.82					
1	6	4.2	10	1	1.03	.82					
1	7	11.5	10	1	1.03	.82					
1	8	4.2	10	1	1.03	.82					
1	9	11.5	10	1	1.03	.82					
1	10	4.2	10	1	1.03	.82					
1	11	11.5	10	1	1.03	.82					
1	12	4.2	10	1	1.03	.82					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	387	PEOPLE	255	325	1.7	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	200	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				-----Reheat Minimum-----	
	Cooling		Heating		Cooling		Heating		Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				-----Room Exhaust-----	
	Cooling		Heating		Cooling		Heating		Value	Units
1	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	MZ SYSTEMS

-----CARD 40--- System Type -----

System Set Number	System Type	-----OPTIONAL VENTILATION SYSTEM-----					
		Ventil Deck	Cooling	Heating	Cooling	Heating	Fan Static Pressure
		Location	SADBVh	SADBVh	Schedule	Schedule	
1	MZ						

-----CARD 41-- Zone Assignment

[illegible]

-----CARD 42--- Fan SP and Duct Parameters-----

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

FGHEAT SCHD FOR HEAT LOAD CALCS

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

YES AVAILABLE (100%)

System:

MZ MULTIZONE

Device Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 75
24

Source Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0	0
24	

File Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGM Ending Day Type: SUN

Hour Temperature

0 72
24

Job Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100
24

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*****  
*****  
**  
**          T R A C E    6 0 0    A N A L Y S I S          **  
**  
**          by          **  
**  
*****  
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ENERGY STUDY OF HEATING PLANT
CHAPEL-FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29608 (2 BUILDINGS)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 10: 4:29 8/17/94
Dataset Name: FGTYPS12 .TM

System 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==> Mo/Hr: 7/17						*	Mo/Hr: 6/19		*	Mo/Hr: 13/ 1		
Outside Air ==> OADB/WB/HR: 93/ 75/104.9						*	OADB: 93		*	OADB: 23		
						*			*			
	Space	Ret. Air	Ret. Air	Net	Perct	*	Space	Perct	*	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	299,062	0		299,062	44.15	*	334,198	68.85	*	-236,102	-236,102	35.52
Glass Solar	30,694	0		30,694	4.53	*	31,162	6.42	*	0	0	0.00
Glass Cond	11,609	0		11,609	1.71	*	13,163	2.71	*	-32,268	-32,268	4.85
Wall Cond	79,338	0		79,338	11.71	*	91,735	18.90	*	-121,740	-121,740	18.31
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	32,759			32,759	4.84	*	15,167	3.12	*	-42,461	-42,461	6.39
Sub Total==>	453,463	0		453,463	66.95	*	485,425	100.00	*	-432,570	-432,570	65.08
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	223,884	33.05	*	0	0.00	*	0	-232,148	34.92
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==>	453,463	0	0	677,347	100.00	*	485,425	100.00	*	-432,570	-664,718	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
				Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	9,525	
Main Clg	56.4	677.3	529.9	28,827	78.0	64.9	71.7	59.8	57.4	66.9	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	9,705
Totals	56.4	677.3									Wall	8,505
												637 7

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--			--TEMPERATURES (F)---		
	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating	Clg % OA			Type	Clg	Htg
Main Htg	-664.7	28,827	60.7	81.5	Vent	4,650	4,650	16.1			SADB	59.8	81.5
Aux Htg	0.0	0	0.0	0.0	Infil	680	851	3.03			Plenum	75.0	68.0
Preheat	-0.0	28,827	60.7	59.8	Supply	28,827	28,827	510.70			Return	75.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	168.75			Ret/OA	78.0	60.7
Humidif	0.0	0	0.0	0.0	Return	28,827	28,827	71.11			Runarnd	75.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	4,650	4,650	310			Fn MtrTD	0.0	0.0
Total	-664.7				Rm Exh	0	0	16.1			Fn BldTD	0.0	0.0
					Auxil	0	0	3.03			Fn Frict	0.0	0.0
								Htg Btuh/SqFt	-69.79				

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-452,010	0.0	-404,469	0.0	-404,469	0.0	-404,469	0.0	-404,469	0.0
2	32.9	30.7	-309,704	0.0	-427,533	0.0	-427,533	0.0	-427,533	0.0	-427,533	0.0
3	33.1	31.3	-319,098	0.0	-440,860	0.0	-440,860	0.0	-440,860	0.0	-440,860	0.0
4	33.9	32.1	-337,112	0.0	-449,613	0.0	-449,613	0.0	-449,613	0.0	-449,613	0.0
5	35.2	33.5	-356,565	0.0	-453,023	0.0	-453,023	0.0	-453,023	0.0	-453,023	0.0
6	37.0	35.4	-367,702	0.0	-454,434	0.0	-454,434	0.0	-454,434	0.0	-454,434	0.0
7	39.0	37.6	-375,116	0.0	-452,083	0.0	-452,083	0.0	-452,083	0.0	-452,083	0.0
8	41.3	40.1	-377,598	0.0	-445,286	0.0	-445,286	0.0	-445,286	0.0	-445,286	0.0
9	43.7	42.5	-358,237	0.0	-430,357	0.0	-430,357	0.0	-430,357	0.0	-430,357	0.0
10	46.1	44.0	-328,430	0.0	-417,362	0.0	-417,362	0.0	-417,362	0.0	-417,362	0.0
11	48.4	45.0	-287,774	0.0	-392,344	0.0	-392,344	0.0	-392,344	0.0	-392,344	0.0
12	50.5	45.6	-240,367	0.0	-365,816	0.0	-365,816	0.0	-365,816	0.0	-365,816	0.0
13	52.2	46.1	-184,380	0.0	-329,001	0.0	-329,001	0.0	-329,001	0.0	-329,001	0.0
14	53.5	46.4	-135,060	0.0	-285,557	0.0	-285,557	0.0	-285,557	0.0	-285,557	0.0
15	54.3	46.3	-91,041	0.0	-251,241	0.0	-251,241	0.0	-251,241	0.0	-251,241	0.0
16	54.6	46.1	-58,994	0.0	-220,826	0.0	-220,826	0.0	-220,826	0.0	-220,826	0.0
17	54.0	45.9	-49,108	0.0	-210,026	0.0	-210,026	0.0	-210,026	0.0	-210,026	0.0
18	52.5	45.0	-61,261	0.0	-202,163	0.0	-202,163	0.0	-202,163	0.0	-202,163	0.0
19	50.1	44.8	-79,691	0.0	-215,965	0.0	-215,965	0.0	-215,965	0.0	-215,965	0.0
20	47.1	43.3	-102,636	0.0	-246,654	0.0	-246,654	0.0	-246,654	0.0	-246,654	0.0
21	43.7	40.4	-128,166	0.0	-271,909	0.0	-271,909	0.0	-271,909	0.0	-271,909	0.0
22	40.4	37.3	-173,957	0.0	-313,397	0.0	-313,397	0.0	-313,397	0.0	-313,397	0.0
23	37.3	34.9	-208,442	0.0	-344,454	0.0	-344,454	0.0	-344,454	0.0	-344,454	0.0
24	34.9	32.6	-239,137	0.0	-375,166	0.0	-375,166	0.0	-375,166	0.0	-375,166	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-229,675	0.0	-316,241	0.0	-329,913	0.0	-329,913	0.0	-329,913	0.0
2	39.7	37.1	-264,432	0.0	-354,851	0.0	-354,851	0.0	-354,851	0.0	-354,851	0.0
3	37.8	35.1	-290,007	0.0	-379,744	0.0	-379,744	0.0	-379,744	0.0	-379,744	0.0
4	36.3	33.8	-310,696	0.0	-401,646	0.0	-401,646	0.0	-401,646	0.0	-401,646	0.0
5	35.1	32.6	-331,535	0.0	-426,473	0.0	-426,473	0.0	-426,473	0.0	-426,473	0.0
6	34.4	32.0	-344,190	0.0	-443,220	0.0	-443,220	0.0	-443,220	0.0	-443,220	0.0
7	34.1	31.9	-352,288	0.0	-456,608	0.0	-456,608	0.0	-456,608	0.0	-456,608	0.0
8	34.6	32.4	-347,161	0.0	-462,733	0.0	-462,733	0.0	-462,733	0.0	-462,733	0.0
9	36.0	33.8	-336,679	0.0	-458,678	0.0	-458,678	0.0	-458,678	0.0	-458,678	0.0
10	38.2	34.7	-303,682	0.0	-448,234	0.0	-448,234	0.0	-448,234	0.0	-448,234	0.0
11	40.9	36.2	-263,230	0.0	-429,494	0.0	-429,494	0.0	-429,494	0.0	-429,494	0.0
12	43.9	37.4	-213,447	0.0	-403,192	0.0	-403,192	0.0	-403,192	0.0	-403,192	0.0
13	46.9	39.4	-161,789	0.0	-361,985	0.0	-361,985	0.0	-361,985	0.0	-361,985	0.0
14	49.7	41.4	-106,263	0.0	-313,667	0.0	-313,667	0.0	-313,667	0.0	-313,667	0.0
15	51.8	42.8	-57,002	0.0	-270,651	0.0	-270,651	0.0	-270,651	0.0	-270,651	0.0
16	53.2	43.9	-37,893	0.0	-236,815	0.0	-236,815	0.0	-236,815	0.0	-236,815	0.0
17	53.7	44.2	-29,060	0.0	-213,316	0.0	-213,316	0.0	-213,316	0.0	-213,316	0.0
18	53.4	44.4	-35,414	0.0	-197,468	0.0	-197,468	0.0	-197,468	0.0	-197,468	0.0
19	52.7	44.4	-53,455	0.0	-203,614	0.0	-203,614	0.0	-203,614	0.0	-203,614	0.0
20	51.5	45.2	-76,292	0.6	-213,286	0.0	-213,286	0.0	-213,286	0.0	-213,286	0.0
21	50.0	44.6	-106,055	0.0	-227,536	0.0	-227,536	0.0	-227,536	0.0	-227,536	0.0
22	48.1	43.3	-129,243	0.0	-252,057	0.0	-252,057	0.0	-252,057	0.0	-252,057	0.0
23	46.1	41.8	-152,579	0.0	-277,300	0.0	-277,300	0.0	-277,300	0.0	-277,300	0.0
24	43.9	40.1	-172,966	0.0	-303,172	0.0	-303,172	0.0	-303,172	0.0	-303,172	0.0

			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OA0B	OA0W	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-60,800	0.0	-62,641	0.0	-132,472	0.0	-132,472	0.0	-132,472	0.0
2	48.7	44.6	-81,298	0.0	-156,999	0.0	-161,532	0.0	-161,532	0.0	-161,532	0.0
3	46.6	42.9	-102,713	0.0	-190,416	0.0	-212,962	0.0	-212,962	0.0	-212,962	0.0
4	44.9	41.4	-128,839	0.0	-244,132	0.0	-244,132	0.0	-244,132	0.0	-244,132	0.0
5	43.9	40.8	-161,686	0.0	-269,319	0.0	-269,319	0.0	-269,319	0.0	-269,319	0.0
6	43.5	40.8	-178,200	0.0	-288,340	0.0	-288,340	0.0	-288,340	0.0	-288,340	0.0
7	44.0	41.4	-185,931	0.0	-303,915	0.0	-303,915	0.0	-303,915	0.0	-303,915	0.0
8	45.4	42.7	-177,865	0.0	-305,902	0.0	-305,902	0.0	-305,902	0.0	-305,902	0.0
9	47.7	44.3	-156,888	0.0	-296,135	0.0	-296,135	0.0	-296,135	0.0	-296,135	0.0
10	50.6	45.8	-119,929	0.0	-275,059	0.0	-275,059	0.0	-275,059	0.0	-275,059	0.0
11	53.9	47.4	-67,802	0.0	-241,078	0.0	-241,078	0.0	-241,078	0.0	-241,078	0.0
12	57.4	49.0	-10,091	0.0	-194,502	0.0	-194,502	0.0	-194,502	0.0	-194,502	0.0
13	60.7	50.8	0	0.0	-147,427	0.0	-147,427	0.0	-147,427	0.0	-147,427	0.0
14	63.6	52.7	0	1.1	-97,728	0.0	-97,728	0.0	-97,728	0.0	-97,728	0.0
15	65.9	53.7	0	7.4	-52,856	0.0	-52,856	0.0	-52,856	0.0	-52,856	0.0
16	67.3	54.4	0	13.8	-23,292	0.0	-23,292	0.0	-23,292	0.0	-23,292	0.0
17	67.8	54.6	0	15.8	-5,239	0.0	-5,239	0.0	-5,239	0.0	-5,239	0.0
18	67.4	54.8	0	15.5	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	13.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	10.8	-13,388	0.0	-13,388	0.0	-13,388	0.0	-13,388	0.0
21	62.5	56.0	0	7.1	-33,809	0.0	-33,809	0.0	-33,809	0.0	-33,809	0.0
22	60.0	54.1	-13,222	4.0	-53,816	0.0	-53,816	0.0	-53,816	0.0	-53,816	0.0
23	57.1	51.9	-44,385	2.7	-79,778	0.0	-79,778	0.0	-79,778	0.0	-79,778	0.0
24	54.2	49.4	-69,196	1.7	-106,605	0.0	-106,605	0.0	-106,605	0.0	-106,605	0.0

April			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	61.0	56.5		0		1.1	-59,203		0.8		-59,203		0.8		-59,203		0.8		-59,203		0.8	
2	58.9	54.9	-34,571		3.0		-76,382		0.0		-76,382		0.0		-76,382		0.0		-76,382		0.0	
3	57.0	53.5	-24,787		1.9		-7,775		0.0		-7,775		0.0		-7,775		0.0		-7,775		0.0	
4	55.4	52.4	-44,512		1.0		-91,609		0.0		-91,609		0.0		-91,609		0.0		-91,609		0.0	
5	54.2	51.4	-57,216		0.0		-110,790		0.0		-110,790		0.0		-110,790		0.0		-110,790		0.0	
6	53.5	50.9	-9,874		0.0		-122,345		0.0		-122,345		0.0		-122,345		0.0		-122,345		0.0	
7	53.2	51.1		0		0.0	-155,751		0.0		-155,751		0.0		-155,751		0.0		-155,751		0.0	
8	53.9	51.5	-18,493		0.0		-171,650		0.0		-171,650		0.0		-171,650		0.0		-171,650		0.0	
9	55.9	52.1		0		0.0	-159,866		0.0		-159,866		0.0		-159,866		0.0		-159,866		0.0	
10	58.9	53.2		0		0.0	-130,419		0.0		-130,419		0.0		-130,419		0.0		-130,419		0.0	
11	62.6	55.2		0		0.0	-88,988		0.0		-88,988		0.0		-88,988		0.0		-88,988		0.0	
12	66.5	57.3		0		7.2	-40,721		0.0		-40,721		0.0		-40,721		0.0		-40,721		0.0	
13	70.2	59.6		0		14.2		0		0.0		0		0.0		0		0.0		0		0.0
14	73.2	61.0		0		19.6		0		0.0		0		0.0		0		0.0		0		0.0
15	75.2	62.2		0		23.7		0		0.4		0		0.4		0		0.4		0		0.4
16	75.9	62.2		0		26.9		0		6.3		0		6.3		0		6.3		0		6.3
17	75.6	62.0		0		28.5		0		9.9		0		9.9		0		9.9		0		9.9
18	74.9	61.7		0		28.8		0		10.7		0		10.7		0		10.7		0		10.7
19	73.7	62.0		0		27.1		0		10.1		0		10.2		0		10.2		0		10.2
20	72.1	62.4		0		23.9		0		9.0		0		9.0		0		9.0		0		9.0
21	70.2	63.3		0		20.3		0		6.8		0		6.8		0		6.8		0		6.8
22	68.0	62.5		0		15.8		0		4.3		0		4.3		0		4.3		0		4.3
23	65.7	60.5		0		12.0	-9,735		2.4		-9,735		2.4		-9,735		2.4		-9,735		2.4	
24	63.4	58.5		0		8.9	-35,749		1.5		-35,749		1.5		-35,749		1.5		-35,749		1.5	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

May	----- Design -----					----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	62.7	63.5		0	15.8		-22,585		2.4		-22,585		2.4		-22,585		2.4		-22,585		2.4
2	61.4	61.5		0	12.4		-45,282		1.4		-45,282		1.4		-45,282		1.4		-45,282		1.4
3	60.4	59.7		0	9.5		-61,733		0.6		-61,733		0.6		-61,733		0.6		-61,733		0.6
4	59.7	58.4		0	6.8		-11,849		0.0		-11,849		0.0		-11,849		0.0		-11,849		0.0
5	59.4	57.1		0	4.7		-35,610		0.0		-35,610		0.0		-35,610		0.0		-35,610		0.0
6	59.9	56.5		0	2.9		-70,869		0.0		-70,869		0.0		-70,869		0.0		-70,869		0.0
7	61.2	56.5		0	2.9		-67,523		0.0		-67,523		0.0		-67,523		0.0		-67,523		0.0
8	63.5	56.3		0	3.6		-56,843		0.0		-56,843		0.0		-56,843		0.0		-56,843		0.0
9	66.8	56.3		0	5.9		-35,270		0.0		-35,270		0.0		-35,270		0.0		-35,270		0.0
10	70.6	57.2		0	9.9		-8,028		0.0		-8,028		0.0		-8,028		0.0		-8,028		0.0
11	75.0	58.9		0	14.8		0		0.0		0		0.0		0		0.0		0		0.0
12	79.0	60.9		0	20.1		0		1.3		0		1.3		0		1.3		0		1.3
13	82.1	63.7		0	25.5		0		7.4		0		7.4		0		7.4		0		7.4
14	84.1	65.3		0	30.6		0		12.0		0		12.0		0		12.0		0		12.0
15	84.9	66.9		0	35.5		0		17.7		0		17.7		0		17.7		0		17.7
16	84.1	67.1		0	38.3		0		19.8		0		19.8		0		19.8		0		19.8
17	82.3	67.3		0	40.4		0		20.5		0		20.5		0		20.5		0		20.5
18	79.5	67.1		0	40.2		0		20.2		0		20.2		0		20.2		0		20.2
19	76.2	67.5		0	38.5		0		19.0		0		19.0		0		19.0		0		19.0
20	72.9	68.9		0	35.5		0		16.2		0		16.2		0		16.2		0		16.2
21	70.1	71.0		0	31.8		0		13.2		0		13.2		0		13.2		0		13.2
22	67.6	69.9		0	27.4		0		9.8		0		9.8		0		9.8		0		9.8
23	65.5	68.0		0	23.0		0		6.4		0		6.4		0		6.4		0		6.4
24	64.0	65.5		0	19.3		0		3.4		0		3.4		0		3.4		0		3.4

June	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	71.4	70.1		0		27.1		0		11.0		0		11.8		0		11.8		0		11.8
2	70.3	68.4		0		24.8		0		8.2		0		8.1		0		8.1		0		8.1
3	69.4	67.3		0		21.2		0		5.8		0		5.9		0		5.9		0		5.9
4	68.7	66.5		0		18.3		0		2.9		0		3.0		0		3.0		0		3.0
5	68.5	65.8		0		15.4		-1,090		1.6		-1,090		1.6		-1,090		1.6		-1,090		1.6
6	68.9	65.7		0		13.8		-9,631		0.8		-9,631		0.8		-9,631		0.8		-9,631		0.8
7	70.0	66.3		0		14.0		-7,461		0.4		-7,461		0.4		-7,461		0.4		-7,461		0.4
8	72.0	66.9		0		15.7		0		0.5		0		0.6		0		0.6		0		0.6
9	74.9	67.7		0		18.0		0		2.6		0		2.6		0		2.6		0		2.6
10	78.2	68.1		0		22.0		0		7.1		0		7.1		0		7.1		0		7.1
11	81.9	69.1		0		26.9		0		12.0		0		12.0		0		12.0		0		12.0
12	85.4	70.1		0		33.6		0		17.2		0		17.3		0		17.3		0		17.3
13	88.1	71.0		0		39.4		0		21.6		0		21.8		0		21.8		0		21.8
14	89.8	72.5		0		45.2		0		27.9		0		28.0		0		28.0		0		28.0
15	90.5	74.0		0		50.4		0		33.2		0		33.2		0		33.2		0		33.2
16	89.8	73.7		0		54.2		0		33.5		0		33.5		0		33.5		0		33.5
17	88.3	74.2		0		56.0		0		35.1		0		35.1		0		35.1		0		35.1
18	85.9	73.9		0		56.0		0		33.9		0		33.9		0		33.9		0		33.9
19	83.0	74.5		0		53.8		0		31.2		0		31.2		0		31.2		0		31.2
20	80.2	75.3		0		50.8		0		28.6		0		28.6		0		28.6		0		28.6
21	77.7	76.5		0		47.5		0		27.0		0		27.0		0		27.0		0		27.0
22	75.5	75.7		0		42.5		0		23.5		0		23.5		0		23.5		0		23.5
23	73.8	74.0		0		37.9		0		19.1		0		19.1		0		19.1		0		19.1
24	72.5	72.1		0		33.2		0		15.2		0		15.2		0		15.2		0		15.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	71.9	70.5	0	28.5	0	10.1	0	11.1	0	11.1	0	11.1
2	71.1	69.4	0	23.8	0	8.4	0	8.2	0	8.2	0	8.2
3	70.5	68.4	0	20.9	0	5.1	0	5.2	0	5.2	0	5.2
4	70.1	67.7	0	18.6	0	3.5	0	3.6	0	3.6	0	3.6
5	69.9	67.4	0	16.5	0	1.4	0	1.4	0	1.4	0	1.4
6	70.2	67.5	0	14.4	-5,887	0.9	-5,887	0.9	-5,887	0.9	-5,887	0.9
7	71.0	68.0	0	14.9	-6,472	0.4	-6,472	0.5	-6,472	0.5	-6,472	0.5
8	72.3	69.0	0	15.9	-109	0.0	-109	0.0	-109	0.0	-109	0.0
9	74.3	69.5	0	17.9	0	3.3	0	3.3	0	3.3	0	3.3
10	76.6	70.6	0	21.0	0	6.8	0	6.8	0	6.8	0	6.8
11	79.2	71.8	0	26.3	0	11.2	0	11.3	0	11.3	0	11.3
12	81.7	73.0	0	33.0	0	17.1	0	17.3	0	17.3	0	17.3
13	83.5	74.4	0	38.8	0	21.6	0	21.6	0	21.6	0	21.6
14	84.7	74.8	0	44.6	0	26.4	0	26.4	0	26.4	0	26.4
15	85.2	75.0	0	48.9	0	30.7	0	30.7	0	30.7	0	30.7
16	84.7	75.0	0	52.7	0	32.5	0	32.5	0	32.5	0	32.5
17	83.7	74.7	0	55.3	0	32.9	0	32.9	0	32.9	0	32.9
18	82.0	74.6	0	54.0	0	32.8	0	32.8	0	32.8	0	32.8
19	80.0	74.6	0	52.6	0	31.9	0	31.9	0	31.9	0	31.9
20	78.0	74.4	0	49.6	0	29.4	0	29.4	0	29.4	0	29.4
21	76.3	74.9	0	45.9	0	26.4	0	26.4	0	26.4	0	26.4
22	74.8	74.0	0	40.7	0	21.5	0	21.5	0	21.5	0	21.5
23	73.6	72.7	0	36.8	0	17.0	0	17.0	0	17.0	0	17.0
24	72.7	71.6	0	32.5	0	14.0	0	14.0	0	14.0	0	14.0

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	71.1	72.0	0	27.3	0	9.2	0	9.9	0	9.9	0	9.9
2	70.1	70.3	0	21.7	0	6.7	0	6.6	0	6.6	0	6.6
3	69.4	68.9	0	19.2	0	4.1	0	4.1	0	4.1	0	4.1
4	68.9	67.8	0	16.5	0	1.6	0	1.7	0	1.7	0	1.7
5	68.7	66.8	0	13.8	-8,109	1.1	-8,109	1.1	-8,109	1.1	-8,109	1.1
6	69.1	66.4	0	12.5	-14,209	0.6	-14,209	0.6	-14,209	0.6	-14,209	0.6
7	70.0	66.4	0	12.1	-18,570	0.0	-18,570	0.0	-18,570	0.0	-18,570	0.0
8	71.6	66.8	0	13.3	-10,636	0.0	-10,636	0.0	-10,636	0.0	-10,636	0.0
9	73.9	67.7	0	16.0	0	1.4	0	1.4	0	1.4	0	1.4
10	76.7	67.7	0	19.2	0	4.8	0	4.8	0	4.8	0	4.8
11	79.7	68.8	0	24.2	0	9.3	0	9.4	0	9.4	0	9.4
12	82.6	70.3	0	29.9	0	15.3	0	15.4	0	15.4	0	15.4
13	84.8	72.2	0	37.3	0	21.6	0	21.7	0	21.7	0	21.7
14	86.3	73.7	0	43.4	0	26.2	0	26.2	0	26.2	0	26.2
15	86.8	74.6	0	48.1	0	31.0	0	31.0	0	31.0	0	31.0
16	86.3	75.1	0	52.1	0	33.3	0	33.3	0	33.3	0	33.3
17	85.0	75.1	0	52.7	0	33.6	0	33.6	0	33.6	0	33.6
18	83.0	75.3	0	52.6	0	33.9	0	33.9	0	33.9	0	33.9
19	80.6	76.0	0	51.2	0	31.3	0	31.3	0	31.3	0	31.3
20	78.3	76.8	0	47.7	0	28.4	0	28.4	0	28.4	0	28.4
21	76.3	77.2	0	45.2	0	25.9	0	25.9	0	25.9	0	25.9
22	74.5	76.3	0	39.0	0	22.1	0	22.1	0	22.1	0	22.1
23	73.0	75.3	0	34.3	0	16.9	0	16.9	0	16.9	0	16.9
24	72.0	73.7	0	31.1	0	13.8	0	13.8	0	13.8	0	13.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

September			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	65.0	67.4		0	14.7	-21,079	1.7		-21,079	1.7		-21,079	1.7		-21,079	1.7	
2	63.9	65.0		0	11.3	-38,165	0.8		-38,165	0.8		-38,165	0.8		-38,165	0.8	
3	63.1	63.4		0	9.0	-56,569	0.0		-56,569	0.0		-56,569	0.0		-56,569	0.0	
4	62.4	62.2		0	7.0	-11,295	0.0		-11,295	0.0		-11,295	0.0		-11,295	0.0	
5	62.2	61.1		0	5.0	-15,023	0.0		-15,023	0.0		-15,023	0.0		-15,023	0.0	
6	62.6	60.3		0	4.0	-54,580	0.0		-54,580	0.0		-54,580	0.0		-54,580	0.0	
7	63.7	60.2		0	3.3	-56,625	0.0		-56,625	0.0		-56,625	0.0		-56,625	0.0	
8	65.6	60.9		0	3.9	-46,909	0.0		-46,909	0.0		-46,909	0.0		-46,909	0.0	
9	68.4	61.8		0	5.5	-41,830	0.0		-41,830	0.0		-41,830	0.0		-41,830	0.0	
10	71.7	62.1		0	8.8	-11,684	0.0		-11,684	0.0		-11,684	0.0		-11,684	0.0	
11	75.3	63.1		0	12.7	0	0.0		0	0.0		0	0.0		0	0.0	
12	78.8	64.6		0	17.7	0	0.0		0	0.0		0	0.0		0	0.0	
13	81.3	66.7		0	23.2	0	5.9		0	5.9		0	5.9		0	5.9	
14	83.1	68.4		0	29.1	0	8.3		0	8.3		0	8.3		0	8.3	
15	83.7	70.0		0	34.6	0	15.7		0	15.8		0	15.8		0	15.8	
16	83.1	70.5		0	37.5	0	18.1		0	18.2		0	18.2		0	18.2	
17	81.5	70.5		0	38.8	0	19.1		0	19.4		0	19.4		0	19.4	
18	79.2	70.9		0	38.3	0	18.5		0	18.7		0	18.7		0	18.7	
19	76.4	72.7		0	36.9	0	16.8		0	16.8		0	16.8		0	16.8	
20	73.6	74.7		0	35.1	0	15.0		0	15.0		0	15.0		0	15.0	
21	71.2	74.1		0	30.9	0	11.9		0	11.9		0	11.9		0	11.9	
22	69.1	72.4		0	25.2	0	8.3		0	8.3		0	8.3		0	8.3	
23	67.4	70.7		0	20.3	0	4.5		0	4.5		0	4.5		0	4.5	
24	66.1	68.9		0	17.0	-1,737	2.5		-1,737	2.5		-1,737	2.5		-1,737	2.5	

October			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	52.2	50.5		-65,227	0.0	-55,072	0.0		-125,154	0.0		-125,154	0.0		-125,154	0.0	
2	50.1	48.6		-14,698	0.0	-149,444	0.0		-159,088	0.0		-159,088	0.0		-159,088	0.0	
3	48.4	46.9		-89,250	0.0	-184,087	0.0		-203,133	0.0		-203,133	0.0		-203,133	0.0	
4	47.1	45.8		-104,135	0.0	-232,661	0.0		-232,661	0.0		-232,661	0.0		-232,661	0.0	
5	46.3	44.8		-116,549	0.0	-252,295	0.0		-252,295	0.0		-252,295	0.0		-252,295	0.0	
6	46.0	44.5		-148,432	0.0	-272,168	0.0		-272,168	0.0		-272,168	0.0		-272,168	0.0	
7	46.8	45.3		-163,700	0.0	-280,868	0.0		-280,868	0.0		-280,868	0.0		-280,868	0.0	
8	48.9	47.5		-156,508	0.0	-279,655	0.0		-279,655	0.0		-279,655	0.0		-279,655	0.0	
9	52.2	49.9		-129,055	0.0	-263,370	0.0		-263,370	0.0		-263,370	0.0		-263,370	0.0	
10	56.2	52.5		-93,269	0.0	-231,759	0.0		-231,759	0.0		-231,759	0.0		-231,759	0.0	
11	60.4	54.4		-41,694	0.0	-190,466	0.0		-190,466	0.0		-190,466	0.0		-190,466	0.0	
12	64.4	56.0		-6,022	0.0	-141,114	0.0		-141,114	0.0		-141,114	0.0		-141,114	0.0	
13	67.7	57.3		0	0.0	-90,439	0.0		-90,439	0.0		-90,439	0.0		-90,439	0.0	
14	69.8	58.2		0	4.1	-40,188	0.0		-40,188	0.0		-40,188	0.0		-40,188	0.0	
15	70.6	58.1		0	8.9	-4,596	0.0		-4,596	0.0		-4,596	0.0		-4,596	0.0	
16	70.3	57.5		0	14.6	0	0.0		0	0.0		0	0.0		0	0.0	
17	69.5	57.3		0	15.3	0	0.0		0	0.0		0	0.0		0	0.0	
18	68.2	57.7		0	14.8	0	0.0		0	0.0		0	0.0		0	0.0	
19	66.5	60.6		0	12.4	0	0.0		0	0.0		0	0.0		0	0.0	
20	64.4	60.8		0	9.0	0	0.0		0	0.0		0	0.0		0	0.0	
21	62.1	59.4		0	5.4	-35,368	0.0		-35,368	0.0		-35,368	0.0		-35,368	0.0	
22	59.6	57.3		-11,076	3.0	-57,305	0.0		-57,305	0.0		-57,305	0.0		-57,305	0.0	
23	57.0	55.1		-39,208	2.0	-78,899	0.0		-78,899	0.0		-78,899	0.0		-78,899	0.0	
24	54.5	52.7		-61,190	0.9	-102,352	0.0		-102,352	0.0		-102,352	0.0		-102,352	0.0	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-90,938	0.0	-142,537	0.0	-175,405	0.0	-175,405	0.0	-175,405	0.0
2	49.4	47.3	-111,852	0.0	-172,252	0.0	-206,506	0.0	-206,506	0.0	-206,506	0.0
3	47.2	45.3	-140,266	0.0	-232,561	0.0	-232,561	0.0	-232,561	0.0	-232,561	0.0
4	45.3	43.4	-180,934	0.0	-257,946	0.0	-257,946	0.0	-257,946	0.0	-257,946	0.0
5	43.9	42.2	-197,000	0.0	-281,740	0.0	-281,740	0.0	-281,740	0.0	-281,740	0.0
6	43.0	41.4	-208,324	0.0	-301,561	0.0	-301,561	0.0	-301,561	0.0	-301,561	0.0
7	42.7	41.2	-214,501	0.0	-319,713	0.0	-319,713	0.0	-319,713	0.0	-319,713	0.0
8	43.5	42.0	-210,868	0.0	-328,562	0.0	-328,562	0.0	-328,562	0.0	-328,562	0.0
9	45.9	44.0	-187,322	0.0	-324,744	0.0	-324,744	0.0	-324,744	0.0	-324,744	0.0
10	49.4	46.6	-148,268	0.0	-300,872	0.0	-300,872	0.0	-300,872	0.0	-300,872	0.0
11	53.8	48.6	-100,838	0.0	-269,219	0.0	-269,219	0.0	-269,219	0.0	-269,219	0.0
12	58.4	50.6	-46,817	0.0	-222,033	0.0	-222,033	0.0	-222,033	0.0	-222,033	0.0
13	62.8	52.6	-7,304	0.0	-172,145	0.0	-172,145	0.0	-172,145	0.0	-172,145	0.0
14	66.3	54.5	0	0.0	-118,424	0.0	-118,424	0.0	-118,424	0.0	-118,424	0.0
15	68.7	55.7	0	2.5	-75,784	0.0	-75,784	0.0	-75,784	0.0	-75,784	0.0
16	69.5	56.1	0	5.4	-44,289	0.0	-44,289	0.0	-44,289	0.0	-44,289	0.0
17	69.2	55.8	0	9.4	-29,914	0.0	-29,914	0.0	-29,914	0.0	-29,914	0.0
18	68.3	57.0	0	8.4	-24,536	0.0	-24,536	0.0	-24,536	0.0	-24,536	0.0
19	66.9	59.4	0	5.9	-30,646	0.0	-30,646	0.0	-30,646	0.0	-30,646	0.0
20	65.0	59.4	-813	2.8	-47,553	0.0	-47,553	0.0	-47,553	0.0	-47,553	0.0
21	62.8	58.2	-29,101	1.9	-65,779	0.0	-65,779	0.0	-65,779	0.0	-65,779	0.0
22	60.2	56.1	-55,996	1.0	-89,348	0.0	-89,348	0.0	-89,348	0.0	-89,348	0.0
23	57.5	54.0	-76,376	0.0	-116,869	0.0	-116,869	0.0	-116,869	0.0	-116,869	0.0
24	54.7	51.7	-9,644	0.0	-146,365	0.0	-146,365	0.0	-146,365	0.0	-146,365	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-186,434	0.0	-283,980	0.0	-283,980	0.0	-283,980	0.0	-283,980	0.0
2	43.2	41.1	-207,869	0.0	-308,090	0.0	-308,090	0.0	-308,090	0.0	-308,090	0.0
3	41.8	39.8	-229,685	0.0	-329,936	0.0	-329,936	0.0	-329,936	0.0	-329,936	0.0
4	40.7	38.7	-247,642	0.0	-346,906	0.0	-346,906	0.0	-346,906	0.0	-346,906	0.0
5	40.1	38.4	-264,506	0.0	-364,012	0.0	-364,012	0.0	-364,012	0.0	-364,012	0.0
6	39.9	38.4	-278,146	0.0	-379,110	0.0	-379,110	0.0	-379,110	0.0	-379,110	0.0
7	40.5	39.0	-280,893	0.0	-390,810	0.0	-390,810	0.0	-390,810	0.0	-390,810	0.0
8	42.2	40.7	-280,474	0.0	-390,250	0.0	-390,250	0.0	-390,250	0.0	-390,250	0.0
9	44.9	43.4	-265,946	0.0	-376,666	0.0	-376,666	0.0	-376,666	0.0	-376,666	0.0
10	48.2	45.8	-237,647	0.0	-356,126	0.0	-356,126	0.0	-356,126	0.0	-356,126	0.0
11	51.7	48.3	-196,206	0.0	-327,873	0.0	-327,873	0.0	-327,873	0.0	-327,873	0.0
12	55.0	50.7	-149,112	0.0	-286,446	0.0	-286,446	0.0	-286,446	0.0	-286,446	0.0
13	57.7	52.0	-104,499	0.0	-250,966	0.0	-250,966	0.0	-250,966	0.0	-250,966	0.0
14	59.5	52.6	-55,329	0.0	-207,617	0.0	-207,617	0.0	-207,617	0.0	-207,617	0.0
15	60.1	52.7	-15,713	0.0	-176,217	0.0	-176,217	0.0	-176,217	0.0	-176,217	0.0
16	59.9	52.6	0	0.0	-155,649	0.0	-155,649	0.0	-155,649	0.0	-155,649	0.0
17	59.2	52.1	0	0.0	-138,131	0.0	-138,131	0.0	-138,131	0.0	-138,131	0.0
18	58.2	51.8	0	0.0	-137,475	0.0	-137,475	0.0	-137,475	0.0	-137,475	0.0
19	56.8	52.2	-25,660	0.0	-145,619	0.0	-145,619	0.0	-145,619	0.0	-145,619	0.0
20	55.0	51.4	-49,650	0.0	-161,735	0.0	-161,735	0.0	-161,735	0.0	-161,735	0.0
21	53.1	50.1	-71,697	0.0	-186,382	0.0	-186,382	0.0	-186,382	0.0	-186,382	0.0
22	51.0	48.1	-97,056	0.0	-204,835	0.0	-204,835	0.0	-204,835	0.0	-204,835	0.0
23	48.9	46.2	-114,756	0.0	-231,100	0.0	-231,100	0.0	-231,100	0.0	-231,100	0.0
24	46.9	44.1	-135,202	0.0	-258,564	0.0	-258,564	0.0	-258,564	0.0	-258,564	0.0

01 Card - Job Information

Project: ENERGY STUDY OF HEATING PLANT
 Location: CHAPEL-FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29608 (2 BUILDINGS)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA	.9	.9	95	76	23	0	.2	.2

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TAI	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	CHAPEL_OFFS

-----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	CHAPEL	102.75	46.25	2	0		24			

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	1	CHAPEL	129	37	2	0		9.75			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design	Room Design DB	Cooling T'stat RH	Cooling T'stat Driftpoint	Heating Room Design	Heating T'stat DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1			50					CLGCONST		LIGHT30	NO
2			50					CLGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	NO	102.75	48		17			
2	1	YES				17			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	46.25	24.75		196	0			
1	2	102.75	24.75		196	90			
1	3	46.25	24.75		196	180			
1	4	65.75	24.75		196	270			
2	1	57.25	13.5		196	0			
2	2	37	13.5		196	180			
2	3	57.25	13.5		196	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	15.3	10	1	1.03	.82					
1	2	2.5	1.5	56	1.03	.82					
1	4	2.5	1.5	28	1.03	.82					
2	1	2.5	1.5	18	1.03	.82					
2	2	2.5	1.5	15	1.03	.82					
2	3	2.5	1.5	12	1.03	.82					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						
2	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	300	PEOPLE	255	325	1.2	WATT-SF	ASHRAE2				
2	10	PEOPLE	255	325	1.4	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
2	1	MISS.	17	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

-----Ventilation-----					-----Infiltration-----					--Reheat Minimum--	
Room Number	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----			Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF			
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF			

-----CARD 30- Fan Airflows -----

-----Main-----					-----Auxiliary-----					--Room Exhaust--	
Room Number	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----			Value	Units
1	1	CFM-SF	1	CFM-SF							
2	1	CFM-SF	1	CFM-SF							

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	MZ SYSTEMS

-----OPTIONAL VENTILATION SYSTEM-----

System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	FC						

[illegible][illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

FC FAN COIL

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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*****  
*****  
**                                     **  
**          T R A C E    6 0 0    A N A L Y S I S          **  
**                                     **  
**          by              **  
**                                     **  
*****  
*****
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ACADEMIC TRAINING BUILDING
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 24801 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 15: 3:45 8/15/94
Dataset Name: FGTYP513 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)					Mo/Hr: 8/16	*	Mo/Hr: 6/18	*	Mo/Hr: 13/ 1			
Outside Air ==)					OADB/WB/HR: 96/ 76/105.0	*	OADB: 96	*	OADB: 23			
						*		*				
	Space	Ret. Air	Ret. Air	Net	Perct	*	Space	Perct	*	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	242,315	0		242,315	12.50	*	308,976	22.47	*	-218,959	-218,959	10.82
Glass Solar	97,920	0		97,920	5.05	*	89,216	6.49	*	0	0	0.00
Glass Cond	43,705	0		43,705	2.25	*	46,170	3.36	*	-110,271	-110,271	5.45
Wall Cond	824,524	0		824,524	42.52	*	867,704	63.10	*	-925,277	-925,277	45.72
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	135,378			135,378	6.98	*	62,967	4.58	*	-170,282	-170,282	8.41
Sub Total==)	1,343,842	0		1,343,842	69.30	*	1,375,033	100.00	*	-1,424,789	-1,424,789	70.40
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	595,361	30.70	*	0	0.00	*	0	-599,092	29.60
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	1,343,842	0	0	1,939,203	100.00	*	1,375,033	100.00	*	-1,424,789	-2,023,881	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	81,096
Main Clg	161.6	1,939.2	1,553.2	81,096	78.1	65.2	73.0	59.7	57.6	68.1	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	40,548
Totals	161.6	1,939.2									Wall	34,108
												2,176
												6

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)--		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	14.8	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	12,000	12,000	Clg Cfm/Sqft	1.00	SAOB	59.7	83.8
Main Htg	-2,023.9	81,096	61.3	83.8	Infil	2,729	3,411	Clg Cfm/Ton	501.83	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	81,096	81,096	Clg Sqft/Ton	501.83	Return	75.0	68.0
Preheat	-0.0	81,096	61.3	59.7	Mincfm	0	0	Clg Btuh/Sqft	23.91	Ret/OA	78.1	61.3
Reheat	0.0	0	0.0	0.0	Return	81,096	81,096	No. People	800	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	12,000	12,000	Htg % OA	14.8	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0
Total	-2,023.9				Auxil	0	0	Htg Btuh/Sqft	-24.96	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-1,015,271	0.0	-1,292,743	0.0	-1,290,946	0.0	-1,290,940	0.0	-1,290,940	0.0
2	32.9	30.7	-1,032,491	0.0	-1,319,111	0.0	-1,317,704	0.0	-1,317,701	0.0	-1,317,701	0.0
3	33.1	31.3	-1,052,573	0.0	-1,320,460	0.0	-1,319,361	0.0	-1,319,357	0.0	-1,319,357	0.0
4	33.9	32.1	-1,067,349	0.0	-1,300,689	0.0	-1,299,829	0.0	-1,299,828	0.0	-1,299,828	0.0
5	35.2	33.5	-1,074,474	0.0	-1,264,005	0.0	-1,263,333	0.0	-1,263,332	0.0	-1,263,332	0.0
6	37.0	35.4	-1,052,236	0.0	-1,210,328	0.0	-1,209,801	0.0	-1,209,800	0.0	-1,209,800	0.0
7	39.0	37.6	-1,010,855	0.0	-1,151,037	0.0	-1,150,626	0.0	-1,150,625	0.0	-1,150,625	0.0
8	41.3	40.1	-940,714	0.0	-1,079,967	0.0	-1,079,646	0.0	-1,079,645	0.0	-1,079,645	0.0
9	43.7	42.5	-832,184	0.0	-1,002,412	0.0	-1,002,161	0.0	-1,002,159	0.0	-1,002,159	0.0
10	46.1	44.0	-694,754	0.0	-916,039	0.0	-915,843	0.0	-915,843	0.0	-915,843	0.0
11	48.4	45.0	-525,428	0.0	-819,974	0.0	-819,819	0.0	-819,819	0.0	-819,819	0.0
12	50.5	45.6	-351,102	0.0	-720,279	0.0	-720,159	0.0	-720,159	0.0	-720,159	0.0
13	52.2	46.1	-208,506	0.0	-630,021	0.0	-629,927	0.0	-629,927	0.0	-629,927	0.0
14	53.5	46.4	-98,788	0.0	-552,246	0.0	-552,174	0.0	-552,174	0.0	-552,174	0.0
15	54.3	46.3	-30,547	0.0	-493,983	0.0	-493,926	0.0	-493,926	0.0	-493,926	0.0
16	54.6	46.1	-11,226	0.0	-456,040	0.0	-455,994	0.0	-455,994	0.0	-455,994	0.0
17	54.0	45.9	-31,057	0.0	-456,737	0.0	-456,702	0.0	-456,702	0.0	-456,702	0.0
18	52.5	45.0	-96,954	0.0	-498,481	0.0	-498,454	0.0	-498,454	0.0	-498,454	0.0
19	50.1	44.8	-196,141	0.0	-586,239	0.0	-586,216	0.0	-586,216	0.0	-586,216	0.0
20	47.1	43.3	-298,933	4.3	-708,187	0.0	-708,171	0.0	-708,171	0.0	-708,171	0.0
21	43.7	40.4	-418,384	3.0	-852,203	0.0	-852,189	0.0	-852,189	0.0	-852,189	0.0
22	40.4	37.3	-547,268	0.0	-992,768	0.0	-992,758	0.0	-992,758	0.0	-992,758	0.0
23	37.3	34.9	-635,348	0.0	-1,123,824	0.0	-1,123,816	0.0	-1,123,816	0.0	-1,123,816	0.0
24	34.9	32.6	-711,160	0.0	-1,225,036	0.0	-1,225,028	0.0	-1,225,028	0.0	-1,225,028	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-736,317	0.0	-908,607	0.0	-989,962	0.0	-990,180	0.0	-990,180	0.0
2	39.7	37.1	-799,247	0.0	-1,014,999	0.0	-1,078,608	0.0	-1,078,778	0.0	-1,078,778	0.0
3	37.8	35.1	-854,995	0.0	-1,112,999	0.0	-1,162,734	0.0	-1,162,868	0.0	-1,162,868	0.0
4	36.3	33.8	-901,591	0.0	-1,190,720	0.0	-1,229,612	0.0	-1,229,715	0.0	-1,229,715	0.0
5	35.1	32.6	-929,519	0.0	-1,254,966	0.0	-1,285,379	0.0	-1,285,460	0.0	-1,285,460	0.0
6	34.4	32.0	-931,834	0.0	-1,296,902	0.0	-1,320,682	0.0	-1,320,746	0.0	-1,320,746	0.0
7	34.1	31.9	-910,177	0.0	-1,322,442	0.0	-1,341,037	0.0	-1,341,087	0.0	-1,341,087	0.0
8	34.6	32.4	-855,313	0.0	-1,314,038	0.0	-1,328,580	0.0	-1,328,620	0.0	-1,328,620	0.0
9	36.0	33.8	-765,822	0.0	-1,264,403	0.0	-1,275,775	0.0	-1,275,805	0.0	-1,275,805	0.0
10	38.2	34.7	-641,906	0.0	-1,175,130	0.0	-1,184,019	0.0	-1,184,043	0.0	-1,184,043	0.0
11	40.9	36.2	-489,182	0.0	-1,058,193	0.0	-1,065,135	0.0	-1,065,155	0.0	-1,065,155	0.0
12	43.9	37.4	-333,386	0.0	-924,373	0.0	-929,791	0.0	-929,806	0.0	-929,806	0.0
13	46.9	39.4	-200,606	0.0	-788,453	0.0	-792,680	0.0	-792,691	0.0	-792,691	0.0
14	49.7	41.4	-101,213	0.0	-660,497	0.0	-663,795	0.0	-663,804	0.0	-663,804	0.0
15	51.8	42.8	-36,221	0.0	-563,109	0.0	-565,681	0.0	-565,689	0.0	-565,689	0.0
16	53.2	43.9	-18,744	0.0	-494,371	0.0	-496,377	0.0	-496,383	0.0	-496,383	0.0
17	53.7	44.2	-29,104	0.0	-461,562	0.0	-463,126	0.0	-463,131	0.0	-463,131	0.0
18	53.4	44.4	-83,328	0.0	-462,847	0.0	-464,067	0.0	-464,072	0.0	-464,072	0.0
19	52.7	44.4	-162,266	0.0	-486,321	0.0	-487,273	0.0	-487,276	0.0	-487,276	0.0
20	51.5	45.2	-263,403	0.0	-539,674	0.0	-540,418	0.0	-540,421	0.0	-540,421	0.0
21	50.0	44.6	-344,160	5.1	-610,331	0.0	-610,912	0.0	-610,914	0.0	-610,914	0.0
22	48.1	43.3	-421,232	9.7	-699,094	0.0	-699,549	0.0	-699,551	0.0	-699,551	0.0
23	46.1	41.8	-588,740	0.0	-791,603	0.0	-791,958	0.0	-791,959	0.0	-791,959	0.0
24	43.9	40.1	-655,329	0.0	-891,561	0.0	-891,839	0.0	-891,839	0.0	-891,839	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
HZ SYSTEMS

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-340,496	0.0	-333,525	3.4	-523,109	0.0	-524,142	0.0	-524,151	0.0
2	48.7	44.6	-392,065	0.0	-443,624	10.6	-640,840	0.0	-641,648	0.0	-641,655	0.0
3	46.6	42.9	-436,183	0.0	-656,368	0.0	-733,986	0.0	-734,618	0.0	-734,623	0.0
4	44.9	41.4	-480,866	0.0	-750,199	0.0	-810,889	0.0	-811,383	0.0	-811,387	0.0
5	43.9	40.8	-501,861	0.0	-813,063	0.0	-860,524	0.0	-860,910	0.0	-860,914	0.0
6	43.5	40.8	-494,792	0.0	-850,217	0.0	-887,333	0.0	-887,635	0.0	-887,638	0.0
7	44.0	41.4	-461,251	0.0	-849,355	0.0	-878,386	0.0	-878,622	0.0	-878,624	0.0
8	45.4	42.7	-385,313	0.0	-809,959	0.0	-832,668	0.0	-832,852	0.0	-832,854	0.0
9	47.7	44.3	-264,736	0.0	-728,173	0.0	-745,932	0.0	-746,076	0.0	-746,077	0.0
10	50.6	45.8	-107,397	0.0	-613,805	0.0	-627,687	0.0	-627,800	0.0	-627,801	0.0
11	53.9	47.4	0	0.0	-475,613	0.0	-486,459	0.0	-486,546	0.0	-486,548	0.0
12	57.4	49.0	0	0.0	-323,936	0.0	-332,406	0.0	-332,474	0.0	-332,476	0.0
13	60.7	50.8	0	0.0	-179,305	0.0	-185,916	0.0	-185,971	0.0	-185,971	0.0
14	63.6	52.7	0	5.5	-50,860	0.0	-56,020	0.0	-56,060	0.0	-56,060	0.0
15	65.9	53.7	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	59.2	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	54.2	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	41.8	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	21.9	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	-111,754	0.0	-113,921	0.0	-113,939	0.0	-113,939	0.0
23	57.1	51.9	0	0.0	-252,996	0.0	-254,689	0.0	-254,704	0.0	-254,704	0.0
24	54.2	49.4	-22,285	0.0	-389,826	0.0	-391,149	0.0	-391,161	0.0	-391,161	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	-84,624	0.0	-116,881	0.0	-116,881	0.0	-116,881	0.0
4	55.4	52.4	0	0.0	-203,217	0.0	-228,368	0.0	-228,368	0.0	-228,368	0.0
5	54.2	51.4	-28,568	0.0	-296,223	0.0	-316,104	0.0	-316,104	0.0	-316,104	0.0
6	53.5	50.9	-29,248	0.0	-361,974	0.0	-377,657	0.0	-377,657	0.0	-377,657	0.0
7	53.2	51.1	0	0.0	-406,500	0.0	-418,777	0.0	-418,777	0.0	-418,777	0.0
8	53.9	51.5	0	0.0	-401,294	0.0	-410,904	0.0	-410,904	0.0	-410,904	0.0
9	55.9	52.1	0	0.0	-331,576	0.0	-339,095	0.0	-339,095	0.0	-339,095	0.0
10	58.9	53.2	0	0.0	-212,080	0.0	-217,959	0.0	-217,959	0.0	-217,959	0.0
11	62.6	55.2	0	0.0	-57,699	0.0	-62,295	0.0	-62,295	0.0	-62,295	0.0
12	66.5	57.3	0	9.3	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	11.1	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	20.2	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	81.0	0	3.9	0	4.0	0	4.0	0	4.0
16	75.9	62.2	0	85.2	0	3.9	0	4.0	0	4.0	0	4.0
17	75.6	62.0	0	87.6	0	2.7	0	2.8	0	2.8	0	2.8
18	74.9	61.7	0	82.7	0	1.0	0	1.0	0	1.0	0	1.0
19	73.7	62.0	0	71.2	0	11.7	0	10.4	0	10.4	0	10.4
20	72.1	62.4	0	56.9	0	20.1	0	20.1	0	20.1	0	20.1
21	70.2	63.3	0	39.5	0	13.0	0	13.0	0	13.0	0	13.0
22	68.0	62.5	0	25.6	0	1.5	0	1.5	0	1.5	0	1.5
23	65.7	60.5	0	12.9	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	3.1	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

May	----- Design -----					----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	
1	68.2	63.5		0	0.0		0	2.9		0	3.6		0	3.6		0	3.6		0	3.6	
2	65.7	61.5		0	16.3		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
3	63.6	59.7		0	8.2		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
4	61.8	58.4		0	0.9		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
5	60.5	57.1		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
6	59.7	56.5		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
7	59.4	56.5		0	0.0		-50,313	0.0		-50,313	0.0		-50,313	0.0		-50,313	0.0		-50,313	0.0	
8	60.1	56.3		0	0.0		-58,404	0.0		-58,404	0.0		-58,404	0.0		-58,404	0.0		-58,404	0.0	
9	62.4	56.3		0	9.8		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
10	65.7	57.2		0	35.3		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
11	69.9	58.9		0	53.6		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
12	74.3	60.9		0	69.7		0	2.8		0	2.8		0	2.8		0	2.8		0	2.8	
13	78.5	63.7		0	86.7		0	6.9		0	6.9		0	6.9		0	6.9		0	6.9	
14	81.9	65.3		0	98.4		0	10.3		0	10.3		0	10.3		0	10.3		0	10.3	
15	84.1	66.9		0	109.9		0	12.3		0	12.3		0	12.3		0	12.3		0	12.3	
16	84.9	67.1		0	116.3		0	45.4		0	45.4		0	45.4		0	45.4		0	45.4	
17	84.6	67.3		0	116.6		0	66.1		0	66.1		0	66.1		0	66.1		0	66.1	
18	83.8	67.1		0	111.9		0	71.4		0	71.4		0	71.4		0	71.4		0	71.4	
19	82.4	67.5		0	104.3		0	69.4		0	69.4		0	69.4		0	69.4		0	69.4	
20	80.6	68.9		0	90.4		0	64.8		0	64.8		0	64.8		0	64.8		0	64.8	
21	78.5	71.0		0	76.6		0	60.0		0	60.0		0	60.0		0	60.0		0	60.0	
22	76.1	69.9		0	61.8		0	47.8		0	47.8		0	47.8		0	47.8		0	47.8	
23	73.4	68.0		0	48.2		0	31.3		0	31.3		0	31.3		0	31.3		0	31.3	
24	70.8	65.5		0	34.3		0	18.5		0	18.5		0	18.5		0	18.5		0	18.5	

June	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		71.7		0		38.5		0		43.9		0		43.9		0		43.9
2	72.6	68.4		0		56.5		0		26.3		0		27.2		0		27.2		0		27.2
3	70.9	67.3		0		48.5		0		15.7		0		15.9		0		15.9		0		15.9
4	69.6	66.5		0		43.2		0		4.8		0		4.9		0		4.9		0		4.9
5	68.7	65.8		0		36.3		0		0.0		0		0.0		0		0.0		0		0.0
6	68.5	65.7		0		33.2		0		0.0		0		0.0		0		0.0		0		0.0
7	69.0	66.3		0		37.1		0		0.0		0		0.0		0		0.0		0		0.0
8	70.6	66.9		0		50.6		0		0.0		0		0.0		0		0.0		0		0.0
9	73.0	67.7		0		68.0		0		0.0		0		0.0		0		0.0		0		0.0
10	76.1	68.1		0		83.5		0		23.9		0		23.9		0		23.9		0		23.9
11	79.5	69.1		0		99.1		0		50.1		0		50.1		0		50.1		0		50.1
12	82.9	70.1		0		115.4		0		62.3		0		62.3		0		62.3		0		62.3
13	86.0	71.0		0		128.0		0		73.3		0		73.3		0		73.3		0		73.3
14	88.4	72.5		0		140.0		0		87.2		0		87.2		0		87.2		0		87.2
15	90.0	74.0		0		148.5		0		101.9		0		101.9		0		101.9		0		101.9
16	90.5	73.7		0		156.4		0		105.1		0		105.1		0		105.1		0		105.1
17	90.3	74.2		0		158.4		0		112.5		0		112.5		0		112.5		0		112.5
18	89.4	73.9		0		154.6		0		114.6		0		114.6		0		114.6		0		114.6
19	88.1	74.5		0		146.5		0		111.9		0		111.9		0		111.9		0		111.9
20	86.4	75.3		0		131.8		0		106.8		0		106.8		0		106.8		0		106.8
21	84.3	76.5		0		118.7		0		100.7		0		100.7		0		100.7		0		100.7
22	81.9	75.7		0		103.4		0		90.1		0		90.1		0		90.1		0		90.1
23	79.5	74.0		0		89.8		0		74.6		0		74.6		0		74.6		0		74.6
24	77.0	72.1		0		78.5		0		58.1		0		58.1		0		58.1		0		58.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

July			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	73.7	70.5		0	72.0		0	28.2		0	32.5		0	32.5		0	32.5
2	72.4	69.4		0	57.6		0	20.3		0	21.2		0	21.2		0	21.2
3	71.3	68.4		0	52.0		0	8.7		0	8.9		0	8.9		0	8.9
4	70.5	67.7		0	45.1		0	1.2		0	1.2		0	1.2		0	1.2
5	70.0	67.4		0	41.0		0	0.0		0	0.0		0	0.0		0	0.0
6	69.9	67.5		0	40.2		0	0.0		0	0.0		0	0.0		0	0.0
7	70.3	68.0		0	43.9		0	0.0		0	0.0		0	0.0		0	0.0
8	71.7	69.0		0	53.6		0	0.0		0	0.0		0	0.0		0	0.0
9	73.7	69.5		0	68.2		0	0.0		0	0.0		0	0.0		0	0.0
10	76.2	70.6		0	82.2		0	25.1		0	25.1		0	25.1		0	25.1
11	78.9	71.8		0	97.1		0	57.4		0	57.4		0	57.4		0	57.4
12	81.4	73.0		0	115.5		0	70.6		0	70.6		0	70.6		0	70.6
13	83.4	74.4		0	128.8		0	81.6		0	81.6		0	81.6		0	81.6
14	84.8	74.8		0	138.2		0	91.4		0	91.4		0	91.4		0	91.4
15	85.2	75.0		0	146.4		0	99.5		0	99.5		0	99.5		0	99.5
16	85.1	75.0		0	152.5		0	103.8		0	103.8		0	103.8		0	103.8
17	84.6	74.7		0	155.2		0	105.5		0	105.5		0	105.5		0	105.5
18	83.8	74.6		0	149.3		0	104.6		0	104.6		0	104.6		0	104.6
19	82.7	74.6		0	142.4		0	102.2		0	102.2		0	102.2		0	102.2
20	81.4	74.4		0	130.6		0	96.0		0	96.0		0	96.0		0	96.0
21	79.9	74.9		0	114.7		0	82.9		0	82.9		0	82.9		0	82.9
22	78.4	74.0		0	100.8		0	69.5		0	69.5		0	69.5		0	69.5
23	76.8	72.7		0	87.5		0	56.3		0	56.3		0	56.3		0	56.3
24	75.2	71.6		0	77.0		0	44.4		0	44.4		0	44.4		0	44.4

August			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	75.0	72.0		0	72.1		0	34.7		0	40.1		0	40.1		0	40.1
2	73.2	70.3		0	55.3		0	25.6		0	26.7		0	26.7		0	26.7
3	71.7	68.9		0	47.1		0	14.3		0	14.6		0	14.6		0	14.6
4	70.4	67.8		0	42.3		0	5.6		0	5.7		0	5.7		0	5.7
5	69.5	66.8		0	36.4		0	0.0		0	0.0		0	0.0		0	0.0
6	68.9	66.4		0	33.7		0	0.0		0	0.0		0	0.0		0	0.0
7	68.7	66.4		0	33.3		0	0.0		0	0.0		0	0.0		0	0.0
8	69.2	66.8		0	44.3		0	0.0		0	0.0		0	0.0		0	0.0
9	70.8	67.7		0	61.7		0	0.0		0	0.0		0	0.0		0	0.0
10	73.2	67.7		0	79.6		0	0.0		0	0.0		0	0.0		0	0.0
11	76.2	68.8		0	97.2		0	31.2		0	31.2		0	31.2		0	31.2
12	79.3	70.3		0	112.8		0	62.3		0	62.3		0	62.3		0	62.3
13	82.3	72.2		0	130.9		0	74.4		0	74.4		0	74.4		0	74.4
14	84.7	73.7		0	142.3		0	85.8		0	85.8		0	85.8		0	85.8
15	86.3	74.6		0	152.5		0	101.2		0	101.2		0	101.2		0	101.2
16	86.8	75.1		0	160.5		0	109.1		0	109.1		0	109.1		0	109.1
17	86.6	75.1		0	158.2		0	111.3		0	111.3		0	111.3		0	111.3
18	86.0	75.3		0	152.1		0	114.7		0	114.7		0	114.7		0	114.7
19	85.1	76.0		0	143.5		0	109.5		0	109.5		0	109.5		0	109.5
20	83.8	76.8		0	127.1		0	100.8		0	100.8		0	100.8		0	100.8
21	82.3	77.2		0	114.0		0	92.4		0	92.4		0	92.4		0	92.4
22	80.6	76.3		0	98.0		0	83.3		0	83.3		0	83.3		0	83.3
23	78.7	75.3		0	85.4		0	67.4		0	67.4		0	67.4		0	67.4
24	76.8	73.7		0	75.0		0	53.4		0	53.4		0	53.4		0	53.4

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	38.5	0	3.4	0	4.5	0	4.5	0	4.5
2	67.6	65.0	0	24.9	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	14.8	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	9.0	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	6.3	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	23.8	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	47.5	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	66.8	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	85.2	0	3.9	0	3.9	0	3.9	0	3.9
13	78.3	66.7	0	102.5	0	8.1	0	8.1	0	8.1	0	8.1
14	81.2	68.4	0	116.0	0	11.3	0	11.4	0	11.4	0	11.4
15	83.0	70.0	0	128.5	0	41.2	0	41.4	0	41.4	0	41.4
16	83.7	70.5	0	133.8	0	82.0	0	82.0	0	82.0	0	82.0
17	83.4	70.5	0	131.7	0	83.7	0	83.7	0	83.7	0	83.7
18	82.8	70.9	0	124.3	0	84.3	0	84.3	0	84.3	0	84.3
19	81.6	72.7	0	113.2	0	79.6	0	79.6	0	79.6	0	79.6
20	80.1	74.7	0	98.8	0	71.3	0	71.3	0	71.3	0	71.3
21	78.3	74.1	0	83.6	0	61.2	0	61.2	0	61.2	0	61.2
22	76.3	72.4	0	66.5	0	48.7	0	48.7	0	48.7	0	48.7
23	74.1	70.7	0	49.7	0	34.6	0	34.6	0	34.6	0	34.6
24	71.8	68.9	0	40.4	0	18.1	0	18.1	0	18.1	0	18.1

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-284,982	0.0	-430,914	0.0	-432,077	0.0	-432,091	0.0
2	50.1	48.6	-30,801	0.0	-390,168	7.2	-538,081	0.0	-538,991	0.0	-539,003	0.0
3	48.4	46.9	-138,341	0.0	-527,702	3.5	-624,569	0.0	-625,282	0.0	-625,291	0.0
4	47.1	45.8	-222,531	0.0	-644,220	0.0	-692,755	0.0	-693,314	0.0	-693,320	0.0
5	46.3	44.8	-281,841	0.0	-702,370	0.0	-740,365	0.0	-740,802	0.0	-740,808	0.0
6	46.0	44.5	-302,138	0.0	-737,737	0.0	-767,471	0.0	-767,814	0.0	-767,817	0.0
7	46.8	45.3	-283,991	0.0	-724,811	0.0	-748,077	0.0	-748,345	0.0	-748,348	0.0
8	48.9	47.5	-221,953	0.0	-656,800	0.0	-675,008	0.0	-675,217	0.0	-675,220	0.0
9	52.2	49.9	-107,083	0.0	-533,999	0.0	-548,246	0.0	-548,408	0.0	-548,410	0.0
10	56.2	52.5	0	0.0	-373,910	0.0	-385,051	0.0	-385,179	0.0	-385,180	0.0
11	60.4	54.4	0	0.0	-199,289	0.0	-207,998	0.0	-208,099	0.0	-208,100	0.0
12	64.4	56.0	0	0.0	-27,986	0.0	-34,789	0.0	-34,867	0.0	-34,869	0.0
13	67.7	57.3	0	6.5	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	7.4	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	6.6	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	63.7	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	69.8	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	58.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	40.8	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	22.5	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	6.8	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	-35,218	0.0	-37,643	0.0	-37,671	0.0	-37,672	0.0
23	57.0	55.1	0	0.0	-179,291	0.0	-181,189	0.0	-181,212	0.0	-181,212	0.0
24	54.5	52.7	0	0.0	-311,987	0.0	-313,473	0.0	-313,490	0.0	-313,490	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MZ SYSTEMS

November		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	52.0	49.2	-277,649	0.0		-328,607	4.2			-505,013	0.0			-506,301	0.0			-506,314	0.0		
2	49.4	47.3	-355,947	0.0		-474,252	4.8			-621,311	0.0			-622,319	0.0			-622,329	0.0		
3	47.2	45.3	-424,711	0.0		-638,413	0.0			-719,073	0.0			-719,860	0.0			-719,869	0.0		
4	45.3	43.4	-480,441	0.0		-741,276	0.0			-804,410	0.0			-805,028	0.0			-805,034	0.0		
5	43.9	42.2	-515,546	0.0		-818,637	0.0			-868,053	0.0			-868,536	0.0			-868,542	0.0		
6	43.0	41.4	-512,371	0.0		-873,251	0.0			-911,932	0.0			-912,310	0.0			-912,315	0.0		
7	42.7	41.2	-479,313	0.0		-901,553	0.0			-931,830	0.0			-932,127	0.0			-932,130	0.0		
8	43.5	42.0	-399,424	0.0		-882,753	0.0			-906,450	0.0			-906,682	0.0			-906,684	0.0		
9	45.9	44.0	-269,284	0.0		-795,328	0.0			-813,874	0.0			-814,055	0.0			-814,057	0.0		
10	49.4	46.6	-107,001	0.0		-655,856	0.0			-670,368	0.0			-670,510	0.0			-670,512	0.0		
11	53.8	48.6	0	0.0		-469,713	0.0			-481,062	0.0			-481,173	0.0			-481,175	0.0		
12	58.4	50.6	0	0.0		-271,273	0.0			-280,142	0.0			-280,229	0.0			-280,230	0.0		
13	62.8	52.6	0	0.0		-81,549	0.0			-88,477	0.0			-88,545	0.0			-88,545	0.0		
14	66.3	54.5	0	7.3		0	0.0			0	0.0			0	0.0			0	0.0		
15	68.7	55.7	0	6.7		0	0.0			0	0.0			0	0.0			0	0.0		
16	69.5	56.1	0	6.8		0	0.0			0	0.0			0	0.0			0	0.0		
17	69.2	55.8	0	60.4		0	0.0			0	0.0			0	0.0			0	0.0		
18	68.3	57.0	0	46.5		0	0.0			0	0.0			0	0.0			0	0.0		
19	66.9	59.4	0	28.2		0	0.0			0	0.0			0	0.0			0	0.0		
20	65.0	59.4	0	11.9		0	0.0			0	0.0			0	0.0			0	0.0		
21	62.8	58.2	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
22	60.2	56.1	0	0.0		-112,126	0.0			-114,811	0.0			-114,837	0.0			-114,837	0.0		
23	57.5	54.0	0	0.0		-246,515	0.0			-248,617	0.0			-248,638	0.0			-248,638	0.0		
24	54.7	51.7	-71,651	0.0		-379,969	0.0			-381,613	0.0			-381,630	0.0			-381,630	0.0		

December		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	44.9	42.5	-517,350	0.0		-764,005	0.0			-833,791	0.0			-833,981	0.0			-833,982	0.0		
2	43.2	41.1	-576,893	0.0		-856,584	0.0			-911,173	0.0			-911,323	0.0			-911,323	0.0		
3	41.8	39.8	-627,326	0.0		-933,512	0.0			-976,214	0.0			-976,331	0.0			-976,331	0.0		
4	40.7	38.7	-669,318	0.0		-996,206	0.0			-1,029,614	0.0			-1,029,705	0.0			-1,029,705	0.0		
5	40.1	38.4	-699,212	0.0		-1,036,077	0.0			-1,062,214	0.0			-1,062,286	0.0			-1,062,286	0.0		
6	39.9	38.4	-694,663	0.0		-1,057,741	0.0			-1,078,192	0.0			-1,078,248	0.0			-1,078,248	0.0		
7	40.5	39.0	-669,421	0.0		-1,046,101	0.0			-1,062,101	0.0			-1,062,146	0.0			-1,062,146	0.0		
8	42.2	40.7	-610,425	0.0		-991,154	0.0			-1,003,669	0.0			-1,003,703	0.0			-1,003,703	0.0		
9	44.9	43.4	-515,358	0.0		-894,181	0.0			-903,971	0.0			-903,999	0.0			-903,999	0.0		
10	48.2	45.8	-393,817	0.0		-767,002	0.0			-774,658	0.0			-774,679	0.0			-774,679	0.0		
11	51.7	48.3	-234,373	0.0		-623,113	0.0			-629,098	0.0			-629,115	0.0			-629,115	0.0		
12	55.0	50.7	-74,553	0.0		-479,123	0.0			-483,800	0.0			-483,813	0.0			-483,813	0.0		
13	57.7	52.0	0	0.0		-354,347	0.0			-358,002	0.0			-358,013	0.0			-358,013	0.0		
14	59.5	52.6	0	0.0		-264,030	0.0			-266,886	0.0			-266,894	0.0			-266,894	0.0		
15	60.1	52.7	0	0.0		-221,780	0.0			-224,010	0.0			-224,016	0.0			-224,016	0.0		
16	59.9	52.6	0	0.0		-208,692	0.0			-210,434	0.0			-210,439	0.0			-210,439	0.0		
17	59.2	52.1	0	0.0		-214,523	0.0			-215,885	0.0			-215,889	0.0			-215,889	0.0		
18	58.2	51.8	0	0.0		-237,630	0.0			-238,694	0.0			-238,697	0.0			-238,697	0.0		
19	56.8	52.2	0	0.0		-289,164	0.0			-289,996	0.0			-289,999	0.0			-289,999	0.0		
20	55.0	51.4	0	0.0		-368,849	0.0			-369,501	0.0			-369,502	0.0			-369,502	0.0		
21	53.1	50.1	-58,462	0.0		-456,772	0.0			-457,282	0.0			-457,283	0.0			-457,283	0.0		
22	51.0	48.1	-182,209	0.0		-554,180	0.0			-554,579	0.0			-554,580	0.0			-554,580	0.0		
23	48.9	46.2	-279,229	3.0		-651,697	0.0			-652,009	0.0			-652,011	0.0			-652,011	0.0		
24	46.9	44.1	-379,743	0.0		-743,137	0.0			-743,381	0.0			-743,381	0.0			-743,381	0.0		

01 Card - Job Information

Project: ACADEMIC TRAINING BUILDING
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 24801 (1 BUILDING)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	COBB HALL_OFFS

-----CARD 20-- General Room Parameters-----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	327	124	3	0		13	2		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES			.12	17			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	292.5	13.5		16	0			
1	2	123.75	13.5		15	90			
1	3	292.5	13.5		15	180			
1	4	123.75	13.5		15	270			
1	5	55	13.5		15	180			
1	6	52	13.6		15	270			
1	7	55	13.6		15	0			
1	8	52	13.6		15	90			
1	9	55	13.6		15	180			
1	10	52	13.6		15	270			
1	11	55	13.6		15	0			
1	12	52	13.6		15	90			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	3	5	10	1.03	.82					
1	2	2	5	8	1.03	.82					
1	3	3	5	10	1.03	.82					
1	4	2	5	8	1.03	.82					
1	5	11.5	10	1	1.03	.82					
1	6	4.2	10	1	1.03	.82					
1	7	11.5	10	1	1.03	.82					
1	8	4.2	10	1	1.03	.82					
1	9	11.5	10	1	1.03	.82					
1	10	4.2	10	1	1.03	.82					
1	11	11.5	10	1	1.03	.82					
1	12	4.2	10	1	1.03	.82					

-----CARD 26-- Schedules -----

Room	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	Minimum	Fans	Fan	Fan	Exhaust	Controls
1	FGHEAT	FGHEAT	YES	YES		

-----CARD 27-- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Ballast	Percent	--- Daylighting ---
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Lights to Ret. Air	Reference Point 1
1	400	PEOPLE	255	325	1.7	WATT-SF	ASHRAE2			Reference Point 2

-----CARD 28--- Miscellaneous Equipment -----

Room	Misc	Energy	Energy	Energy	Percent	Percent	Percent		
Number	Equipment	Consump	Consump	Schedule	Meter	of Load	Misc. Load	Misc. Sens	Radiant
	Number	Value	Units	Code	Code	Sensible	to Room	to Ret. Air	Fraction
1	1	MISS.	120	KW	FGHEAT				Optional

-----CARD 29--- Room Airflows -----

Room	Ventilation				Infiltration				Reheat Minimum	
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room	Main				Auxiliary				Room Exhaust	
Number	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	MZ SYSTEMS

-----CARD 40--- System Type -----

System	Ventil	Fan
Set	Deck	Static
Number	Type	Location
1	MZ	

System

-----CARD 42--- Fan SP and Duct Parameters-

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

NZ MULTIZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		0
24		

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		0
24		

Schedule Name: HTGCONST

Project: SAMPLE HEATING TSTAT SCHEDULE

Location: SAMPLE

Client:

Program User:

Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC

Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

----	-----
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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*****
*****
**                                     **
**          TRACE    600    ANALYSIS          **
**                                     **
**          by              **
**                                     **
*****
*****
```

SIGNAL SCHOOL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 25810 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 10 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 16:46:34 8/19/94
Dataset Name: FGTYP514 .TM

AIRFLOW - ALTERNATIVE 1
SCHOOL_OFFS

----- S Y S T E M S U M M A R Y -----
(Design Airflow Quantities)

System Number	System Type	----- Main -----					Auxil. Supply	Room Exhaust
		Outside Airflow (Cfm)	Cooling Airflow (Cfm)	Heating Airflow (Cfm)	Return Airflow (Cfm)	Exhaust Airflow (Cfm)	Airflow (Cfm)	Airflow (Cfm)
1	FC	13,020	69,014	69,014	75,155	19,161	0	0
2	SZ	1,500	17,875	17,875	19,179	2,804	0	0
Totals		14,520	86,889	86,889	94,335	21,965	0	0

CAPACITY - ALTERNATIVE 1
SCHOOL_OFFS

----- S Y S T E M S U M M A R Y -----
(Design Capacity Quantities)

System Number	System Type	----- Cooling -----				----- Heating -----						
		Main Sys. Capacity (Tons)	Aux. Sys. Capacity (Tons)	Opt. Vent Capacity (Tons)	Cooling Totals (Tons)	Main Sys. Capacity (Btuh)	Aux. Sys. Capacity (Btuh)	Preheat Capacity (Btuh)	Reheat Capacity (Btuh)	Humidif. Capacity (Btuh)	Opt. Vent Capacity (Btuh)	Heating Totals (Btuh)
1	FC	160.7	0.0	0.0	160.7	-2,663,237	0	-75,321	0	0	0	-2,663,237
2	SZ	31.1	0.0	0.0	31.1	-515,027	0	0	0	0	0	-515,027
Totals		191.7	0.0	0.0	191.7	-3,178,264	0	-75,321	0	0	0	-3,178,264

The building peaked at hour 17 month 6 with a capacity of 191.7 tons

System 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==> Mo/Hr: 8/16 * Mo/Hr: 6/18 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 96/ 76/105.0 * OADB: 96 * OADB: 10

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	282,972	0		282,972	14.68	*	362,037	27.88	*	-301,698	-301,698	11.33
Glass Solar	316,480	0		316,480	16.42	*	316,480	24.37	*	0	0	0.00
Glass Cond	138,185	0		138,185	7.17	*	145,980	11.24	*	-449,278	-449,278	16.87
Wall Cond	315,046	0		315,046	16.34	*	379,461	29.22	*	-679,282	-679,282	25.51
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	209,359			209,359	10.86	*	94,480	7.28	*	-395,182	-395,182	14.84
Sub Total==>	1,262,042	0		1,262,042	65.47	*	1,298,438	100.00	*	-1,825,440	-1,825,440	68.54
Internal Loads												
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	665,769	34.53	*	0	0.00	*	0	-837,797	31.46
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	1,262,042	0	0	1,927,811	100.00	*	1,298,438	100.00	*	-1,825,440	-2,663,236	100.00

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR		
	(Tons)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains
Main Clg	160.7	1,927.8	1,453.3	69,014	79.0	65.4	72.8	58.0	56.5
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0
Totals	160.7	1,927.8							

-----AREAS-----

	Gross Total	Glass (sf)	(%)
Floor	148,000		
Part	0		
ExFlr	0		
Roof	74,000	0	0
Wall	40,943	6,880	17

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg
	(Mbh)	(cfm)	Deg F	Deg F
Main Htg	-2,663.2	69,014	57.1	91.8
Aux Htg	0.0	0	0.0	0.0
Preheat	-75.3	69,014	57.1	58.0
Reheat	0.0	0	0.0	0.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-2,663.2			

-----AIRFLOWS (cfm)-----

	Cooling	Heating
Vent	13,020	13,020
Infil	4,094	6,141
Supply	69,014	69,014
Mincfm	0	0
Return	69,014	69,014
Exhaust	13,020	13,020
Rm Exh	0	0
Auxil	0	0

-----ENGINEERING CHECKS-----

	Clg % OA	18.9	Type	Clg	Htg
	Clg Cfm/Sqft	0.47	SAOB	58.0	91.8
	Clg Cfm/Ton	429.59	Plenum	75.0	68.0
	Clg Sqft/Ton	921.25	Return	75.0	68.0
	Clg Btuh/Sqft	13.03	Ret/OA	79.0	57.1
	No. People	868	Runarnd	75.0	68.0
	Htg % OA	18.9	Fn MtrTD	0.0	0.0
	Htg Cfm/Sqft	0.47	Fn BldTD	0.0	0.0
	Htg Btuh/Sqft	-17.99	Fn Frict	0.0	0.0

System 2 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==> Mo/Hr: 7/17 * Mo/Hr: 6/19 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 94/ 75/105.0 * OADB: 93 * OADB: 10

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	167,912	0		167,912	45.00	*	187,793	60.52	*	-155,823	-155,823	30.26
Glass Solar	5,640	0		5,640	1.51	*	4,800	1.55	*	0	0	0.00
Glass Cond	2,188	0		2,188	0.59	*	2,299	0.74	*	-7,836	-7,836	1.52
Wall Cond	83,117	0		83,117	22.27	*	98,148	31.63	*	-170,949	-170,949	33.19
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	41,940			41,940	11.24	*	17,262	5.56	*	-83,899	-83,899	16.29
Sub Total==>	300,797	0		300,797	80.61	*	310,303	100.00	*	-418,507	-418,507	81.26
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	72,375	19.39	*	0	0.00	*	0	-96,520	18.74
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
Grand Total==>	300,797	0	0	373,172	100.00	*	310,303	100.00	*	-418,507	-515,027	100.00

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR	Leaving DB/WB/HR	Gross Total	Glass (sf) (%)
	(Tons)	(Mbh)	(cfm)	Deg F Deg F Grains	Deg F Deg F Grains	Floor	
Main Clg	31.1	373.2	307.5	17,875 76.6 63.8 68.6	59.4 57.0 66.0	38,220	
Aux Clg	0.0	0.0	0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0	
Opt Vent	0.0	0.0	0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0	
Totals	31.1	373.2				38,220	
						0	
						0	
						38,220	0 0
						8,692	120 1

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	8.4	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	1,500	1,500	Clg Cfm/Sqft	0.47	SADB	59.4	89.1
Main Htg	-515.0	17,875	63.1	89.1	Infil	869	1,304	Clg Cfm/Ton	574.81	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	17,875	17,875	Clg Sqft/Ton	1229.03	Return	75.0	68.0
Preheat	-0.0	17,875	63.1	59.4	Mincfm	0	0	Clg Btuh/Sqft	9.76	Ret/OA	76.6	63.1
Reheat	0.0	0	0.0	0.0	Return	17,875	17,875	No. People	100	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	1,500	1,500	Htg % OA	8.4	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	0.47	Fn BldTD	0.0	0.0
Total	-515.0				Auxil	0	0	Htg Btuh/Sqft	-13.48	Fn Frict	0.0	0.0

ENGINEERING CHECKS - ALTERNATIVE 1
SCHOOL_OFFS

----- ENGINEERING CHECKS -----										
System Number	Main/ Auxiliary	System Type	Percent Outside Air	----- Cooling -----				--- Heating ---		Floor Area Sq Ft
				Cfm/ Sq Ft	Cfm/ Ton	Sq Ft /Ton	Btuh/ Sq Ft	Cfm/ Sq Ft	Btuh/ Sq Ft	
1	Main	FC	18.87	0.47	429.6	921.3	13.03	0.47	-17.99	148,000
2	Main	SZ	8.39	0.47	574.8	1,229.0	9.76	0.47	-13.48	38,220

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-2,553,092	0.0	-1,413,208	0.0	-1,413,208	0.0	-1,413,208	0.0	-1,413,208	0.0
2	32.9	30.7	-2,456,914	0.0	-1,477,798	0.0	-1,477,798	0.0	-1,477,798	0.0	-1,477,798	0.0
3	33.1	31.3	-2,375,510	0.0	-1,529,510	0.0	-1,529,510	0.0	-1,529,510	0.0	-1,529,510	0.0
4	33.9	32.1	-1,339,380	0.0	-1,524,412	0.0	-1,524,412	0.0	-1,524,412	0.0	-1,524,412	0.0
5	35.2	33.5	-1,317,535	0.0	-1,553,253	0.0	-1,553,253	0.0	-1,553,253	0.0	-1,553,253	0.0
6	37.0	35.4	-1,351,039	0.0	-1,562,215	0.0	-1,562,215	0.0	-1,562,215	0.0	-1,562,215	0.0
7	39.0	37.6	-1,365,944	0.0	-1,536,604	0.0	-1,536,604	0.0	-1,536,604	0.0	-1,536,604	0.0
8	41.3	40.1	-1,333,923	0.0	-1,506,956	0.0	-1,506,956	0.0	-1,506,956	0.0	-1,506,956	0.0
9	43.7	42.5	-1,206,570	0.0	-1,412,600	0.0	-1,412,600	0.0	-1,412,600	0.0	-1,412,600	0.0
10	46.1	44.0	-1,032,944	0.0	-1,343,380	0.0	-1,343,380	0.0	-1,343,380	0.0	-1,343,380	0.0
11	48.4	45.0	-817,930	0.0	-1,206,706	0.0	-1,206,706	0.0	-1,206,706	0.0	-1,206,706	0.0
12	50.5	45.6	-595,163	0.0	-1,106,222	0.0	-1,106,222	0.0	-1,106,222	0.0	-1,106,222	0.0
13	52.2	46.1	-367,500	0.0	-963,164	0.0	-963,164	0.0	-963,164	0.0	-963,164	0.0
14	53.5	46.4	-189,059	0.0	-827,864	0.0	-827,864	0.0	-827,864	0.0	-827,864	0.0
15	54.3	46.3	-49,421	0.0	-725,129	0.0	-725,129	0.0	-725,129	0.0	-725,129	0.0
16	54.6	46.1	-23,310	0.0	-637,052	0.0	-637,052	0.0	-637,052	0.0	-637,052	0.0
17	54.0	45.9	-8,851	0.0	-617,334	0.0	-617,334	0.0	-617,334	0.0	-617,334	0.0
18	52.5	45.0	-6,657	0.0	-650,227	0.0	-650,227	0.0	-650,227	0.0	-650,227	0.0
19	50.1	44.8	-187,016	0.0	-713,638	0.0	-713,638	0.0	-713,638	0.0	-713,638	0.0
20	47.1	43.3	-365,076	0.0	-805,592	0.0	-805,592	0.0	-805,592	0.0	-805,592	0.0
21	43.7	40.4	-528,302	0.0	-945,899	0.0	-945,899	0.0	-945,899	0.0	-945,899	0.0
22	40.4	37.3	-664,014	0.0	-1,074,648	0.0	-1,074,648	0.0	-1,074,648	0.0	-1,074,648	0.0
23	37.3	34.9	-798,229	0.0	-1,196,668	0.0	-1,196,668	0.0	-1,196,668	0.0	-1,196,668	0.0
24	34.9	32.6	-903,096	0.0	-1,323,183	0.0	-1,323,183	0.0	-1,323,183	0.0	-1,323,183	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-927,920	0.0	-1,148,530	0.0	-1,148,530	0.0	-1,148,530	0.0	-1,148,530	0.0
2	39.7	37.1	-1,021,294	0.0	-1,227,608	0.0	-1,227,608	0.0	-1,227,608	0.0	-1,227,608	0.0
3	37.8	35.1	-1,118,417	0.0	-1,338,488	0.0	-1,338,488	0.0	-1,338,488	0.0	-1,338,488	0.0
4	36.3	33.8	-1,190,001	0.0	-1,397,517	0.0	-1,397,517	0.0	-1,397,517	0.0	-1,397,517	0.0
5	35.1	32.6	-1,239,355	0.0	-1,475,472	0.0	-1,475,472	0.0	-1,475,472	0.0	-1,475,472	0.0
6	34.4	32.0	-1,283,800	0.0	-1,522,292	0.0	-1,522,292	0.0	-1,522,292	0.0	-1,522,292	0.0
7	34.1	31.9	-1,301,653	0.0	-1,578,114	0.0	-1,578,114	0.0	-1,578,114	0.0	-1,578,114	0.0
8	34.6	32.4	-1,251,751	0.0	-1,588,244	0.0	-1,588,244	0.0	-1,588,244	0.0	-1,588,244	0.0
9	36.0	33.8	-1,117,132	0.0	-1,531,994	0.0	-1,531,994	0.0	-1,531,994	0.0	-1,531,994	0.0
10	38.2	34.7	-958,080	0.0	-1,484,352	0.0	-1,484,352	0.0	-1,484,352	0.0	-1,484,352	0.0
11	40.9	36.2	-766,180	0.0	-1,394,887	0.0	-1,394,887	0.0	-1,394,887	0.0	-1,394,887	0.0
12	43.9	37.4	-549,338	0.0	-1,279,112	0.0	-1,279,112	0.0	-1,279,112	0.0	-1,279,112	0.0
13	46.9	39.4	-346,013	0.0	-1,092,628	0.0	-1,092,628	0.0	-1,092,628	0.0	-1,092,628	0.0
14	49.7	41.4	-150,982	0.0	-962,148	0.0	-962,148	0.0	-962,148	0.0	-962,148	0.0
15	51.8	42.8	-33,770	0.0	-825,489	0.0	-825,489	0.0	-825,489	0.0	-825,489	0.0
16	53.2	43.9	-7,457	0.0	-735,894	0.0	-735,894	0.0	-735,894	0.0	-735,894	0.0
17	53.7	44.2	0	0.0	-681,854	0.0	-681,854	0.0	-681,854	0.0	-681,854	0.0
18	53.4	44.4	0	0.0	-651,149	0.0	-651,149	0.0	-651,149	0.0	-651,149	0.0
19	52.7	44.4	0	0.0	-684,550	0.0	-684,550	0.0	-684,550	0.0	-684,550	0.0
20	51.5	45.2	-176,936	0.0	-732,432	0.0	-732,432	0.0	-732,432	0.0	-732,432	0.0
21	50.0	44.6	-395,013	0.0	-790,826	0.0	-790,826	0.0	-790,826	0.0	-790,826	0.0
22	48.1	43.3	-560,462	0.0	-887,500	0.0	-887,500	0.0	-887,500	0.0	-887,500	0.0
23	46.1	41.8	-702,917	0.0	-971,395	0.0	-971,395	0.0	-971,395	0.0	-971,395	0.0
24	43.9	40.1	-812,953	0.0	-1,058,917	0.0	-1,058,917	0.0	-1,058,917	0.0	-1,058,917	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-291,325	0.0	0	0.0	-591,953	0.0	-591,953	0.0	-591,953	0.0
2	48.7	44.6	-416,151	0.0	0	0.0	-712,447	0.0	-712,447	0.0	-712,447	0.0
3	46.6	42.9	-504,708	0.0	0	0.0	-797,471	0.0	-797,471	0.0	-797,471	0.0
4	44.9	41.4	-599,891	0.0	-445,994	0.0	-897,249	0.0	-897,249	0.0	-897,249	0.0
5	43.9	40.8	-660,139	0.0	-828,821	0.0	-964,075	0.0	-964,075	0.0	-964,075	0.0
6	43.5	40.8	-702,101	0.0	-940,056	0.0	-1,021,926	0.0	-1,021,926	0.0	-1,021,926	0.0
7	44.0	41.4	-722,925	0.0	-1,047,081	0.0	-1,047,081	0.0	-1,047,081	0.0	-1,047,081	0.0
8	45.4	42.7	-611,653	0.0	-1,018,832	0.0	-1,018,832	0.0	-1,018,832	0.0	-1,018,832	0.0
9	47.7	44.3	-467,957	0.0	-963,000	0.0	-963,000	0.0	-963,000	0.0	-963,000	0.0
10	50.6	45.8	-274,674	0.0	-863,822	0.0	-863,822	0.0	-863,822	0.0	-863,822	0.0
11	53.9	47.4	-55,670	0.0	-720,651	0.0	-720,651	0.0	-720,651	0.0	-720,651	0.0
12	57.4	49.0	-20,656	0.0	-541,677	0.0	-541,677	0.0	-541,677	0.0	-541,677	0.0
13	60.7	50.8	0	0.0	-393,404	0.0	-393,404	0.0	-393,404	0.0	-393,404	0.0
14	63.6	52.7	0	0.0	-214,585	0.0	-214,585	0.0	-214,585	0.0	-214,585	0.0
15	65.9	53.7	0	0.0	-101,073	0.0	-101,073	0.0	-101,073	0.0	-101,073	0.0
16	67.3	54.4	0	0.0	-12,488	0.0	-12,488	0.0	-12,488	0.0	-12,488	0.0
17	67.8	54.6	0	8.3	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	43.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	31.1	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	24.9	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	12.2	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	-75,193	3.0	-199,324	0.0	-199,324	0.0	-199,324	0.0	-199,324	0.0
23	57.1	51.9	-190,490	0.9	-308,612	0.0	-308,612	0.0	-308,612	0.0	-308,612	0.0
24	54.2	49.4	0	0.0	-452,338	0.0	-452,338	0.0	-452,338	0.0	-452,338	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	-170,906	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2	51.1	-122,497	0.0	-111,053	0.0	-106,188	0.0	-106,188	0.0	-106,188	0.0
8	53.9	51.5	0	0.0	-457,495	0.0	-457,495	0.0	-457,495	0.0	-457,495	0.0
9	55.9	52.1	0	0.0	-410,734	0.0	-410,734	0.0	-410,734	0.0	-410,734	0.0
10	58.9	53.2	0	0.0	-300,986	0.0	-335,113	0.0	-335,113	0.0	-335,113	0.0
11	62.6	55.2	0	0.0	-213,430	0.0	-223,378	0.0	-223,378	0.0	-223,378	0.0
12	66.5	57.3	0	0.0	-31,841	0.0	-31,841	0.0	-31,841	0.0	-31,841	0.0
13	70.2	59.6	0	0.0	-4,266	0.0	-4,266	0.0	-4,266	0.0	-4,266	0.0
14	73.2	61.0	0	14.2	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	73.0	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	86.1	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	97.9	0	0.0	0	0.0	0	0.0	0	0.0
18	74.9	61.7	0	95.8	0	0.0	0	0.0	0	0.0	0	0.0
19	73.7	62.0	0	84.6	0	0.0	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	69.7	0	0.0	0	0.0	0	0.0	0	0.0
21	70.2	63.3	0	55.6	-64,965	0.0	-64,965	0.0	-64,965	0.0	-64,965	0.0
22	68.0	62.5	0	40.9	0	4.3	0	4.3	0	4.3	0	4.3
23	65.7	60.5	0	28.9	-49,311	0.0	-49,311	0.0	-49,311	0.0	-49,311	0.0
24	63.4	58.5	0	16.3	-140,500	0.0	-140,500	0.0	-140,500	0.0	-140,500	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

May			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	36.9	0	11.1	0	11.9	0	11.9	0	11.9
2	65.7	61.5	0	31.0	-9,963	2.6	-9,963	3.0	-9,963	3.0	-9,963	3.0
3	63.6	59.7	0	23.5	-110,742	1.0	-110,742	1.1	-110,742	1.1	-110,742	1.1
4	61.8	58.4	0	14.3	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	9.1	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	4.8	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	9.7	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	18.8	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	31.0	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	46.1	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	62.4	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	78.4	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	95.4	0	0.0	0	0.0	0	0.0	0	0.0
14	81.9	65.3	0	110.0	0	0.0	0	0.0	0	0.0	0	0.0
15	84.1	66.9	0	121.9	0	26.3	0	26.3	0	26.3	0	26.3
16	84.9	67.1	0	131.7	0	64.9	0	65.0	0	65.0	0	65.0
17	84.6	67.3	0	135.6	0	73.3	0	73.4	0	73.4	0	73.4
18	83.8	67.1	0	133.1	0	74.9	0	75.0	0	75.0	0	75.0
19	82.4	67.5	0	123.1	0	70.7	0	70.7	0	70.7	0	70.7
20	80.6	68.9	0	107.4	0	63.3	0	63.4	0	63.4	0	63.4
21	78.5	71.0	0	93.9	0	61.1	0	61.1	0	61.1	0	61.1
22	76.1	69.9	0	79.8	0	50.3	0	50.3	0	50.3	0	50.3
23	73.4	68.0	0	65.8	0	35.5	0	35.5	0	35.5	0	35.5
24	70.8	65.5	0	53.2	0	23.6	0	23.6	0	23.6	0	23.6

June			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	94.5	0	41.8	0	53.0	0	53.0	0	53.0
2	72.6	68.4	0	78.1	0	33.2	0	36.2	0	36.2	0	36.2
3	70.9	67.3	0	64.3	0	25.0	0	26.4	0	26.4	0	26.4
4	69.6	66.5	0	54.2	0	14.3	0	14.7	0	14.7	0	14.7
5	68.7	65.8	0	47.5	0	7.9	0	8.0	0	8.0	0	8.0
6	68.5	65.7	0	43.7	0	2.2	0	2.3	0	2.3	0	2.3
7	69.0	66.3	0	49.1	0	3.1	0	3.2	0	3.2	0	3.2
8	70.6	66.9	0	63.0	0	7.5	0	7.5	0	7.5	0	7.5
9	73.0	67.7	0	78.7	0	14.3	0	14.3	0	14.3	0	14.3
10	76.1	68.1	0	96.7	0	29.1	0	29.2	0	29.2	0	29.2
11	79.5	69.1	0	114.6	0	45.9	0	46.1	0	46.1	0	46.1
12	82.9	70.1	0	131.8	0	63.8	0	64.0	0	64.0	0	64.0
13	86.0	71.0	0	148.3	0	81.5	0	81.6	0	81.6	0	81.6
14	88.4	72.5	0	163.7	0	100.6	0	100.7	0	100.7	0	100.7
15	90.0	74.0	0	178.9	0	121.2	0	121.3	0	121.3	0	121.3
16	90.5	73.7	0	187.7	0	124.1	0	124.2	0	124.2	0	124.2
17	90.3	74.2	0	191.7	0	132.0	0	132.0	0	132.0	0	132.0
18	89.4	73.9	0	185.9	0	133.1	0	133.1	0	133.1	0	133.1
19	88.1	74.5	0	176.0	0	127.3	0	127.3	0	127.3	0	127.3
20	86.4	75.3	0	157.9	0	117.0	0	117.0	0	117.0	0	117.0
21	84.3	76.5	0	147.1	0	114.2	0	114.2	0	114.2	0	114.2
22	81.9	75.7	0	129.4	0	104.1	0	104.1	0	104.1	0	104.1
23	79.5	74.0	0	113.0	0	88.3	0	88.3	0	88.3	0	88.3
24	77.0	72.1	0	101.4	0	68.4	0	68.4	0	68.4	0	68.4

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

July		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7 70.5	0	96.0	0	31.5	0	40.5	0	40.5	0	40.5
2	72.4 69.4	0	74.7	0	28.3	0	31.5	0	31.5	0	31.5
3	71.3 68.4	0	65.8	0	19.8	0	20.8	0	20.8	0	20.8
4	70.5 67.7	0	58.1	0	13.0	0	13.4	0	13.4	0	13.4
5	70.0 67.4	0	52.3	0	6.8	0	7.0	0	7.0	0	7.0
6	69.9 67.5	0	47.7	-6,691	1.3	-6,691	1.4	-6,691	1.4	-6,691	1.4
7	70.3 68.0	0	54.0	0	0.4	0	0.4	0	0.4	0	0.4
8	71.7 69.0	0	66.3	0	9.2	0	9.3	0	9.3	0	9.3
9	73.7 69.5	0	80.7	0	18.7	0	18.8	0	18.8	0	18.8
10	76.2 70.6	0	95.0	0	37.5	0	37.5	0	37.5	0	37.5
11	78.9 71.8	0	110.8	0	51.3	0	51.4	0	51.4	0	51.4
12	81.4 73.0	0	129.3	0	71.8	0	72.0	0	72.0	0	72.0
13	83.4 74.4	0	146.3	0	86.7	0	86.8	0	86.8	0	86.8
14	84.8 74.8	0	161.4	0	101.9	0	102.0	0	102.0	0	102.0
15	85.2 75.0	0	173.2	0	113.4	0	113.4	0	113.4	0	113.4
16	85.1 75.0	0	182.8	0	120.0	0	120.1	0	120.1	0	120.1
17	84.6 74.7	0	187.7	0	118.4	0	118.4	0	118.4	0	118.4
18	83.8 74.6	0	183.5	0	121.0	0	121.0	0	121.0	0	121.0
19	82.7 74.6	0	172.9	0	116.5	0	116.5	0	116.5	0	116.5
20	81.4 74.4	0	156.0	0	106.8	0	106.8	0	106.8	0	106.8
21	79.9 74.9	0	141.5	0	101.1	0	101.1	0	101.1	0	101.1
22	78.4 74.0	0	127.5	0	85.8	0	85.8	0	85.8	0	85.8
23	76.8 72.7	0	111.7	0	68.3	0	68.3	0	68.3	0	68.3
24	75.2 71.6	0	100.1	0	57.2	0	57.2	0	57.2	0	57.2

August		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0 72.0	0	91.1	0	42.0	0	53.3	0	53.3	0	53.3
2	73.2 70.3	0	72.1	0	33.7	0	36.6	0	36.6	0	36.6
3	71.7 68.9	0	60.0	0	25.6	0	26.6	0	26.6	0	26.6
4	70.4 67.8	0	52.9	0	16.1	0	16.5	0	16.5	0	16.5
5	69.5 66.8	0	45.0	0	6.7	0	6.9	0	6.9	0	6.9
6	68.9 66.4	0	41.4	-14,097	2.2	-14,097	2.2	-14,097	2.2	-14,097	2.2
7	68.7 66.4	0	43.1	-37,596	0.4	-37,596	0.4	-37,596	0.4	-37,596	0.4
8	69.2 66.8	0	56.3	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8 67.7	0	72.4	0	7.6	0	7.6	0	7.6	0	7.6
10	73.2 67.7	0	88.9	0	18.2	0	18.2	0	18.2	0	18.2
11	76.2 68.8	0	106.1	0	32.0	0	32.1	0	32.1	0	32.1
12	79.3 70.3	0	125.3	0	52.2	0	52.3	0	52.3	0	52.3
13	82.3 72.2	0	146.7	0	72.6	0	72.8	0	72.8	0	72.8
14	84.7 73.7	0	165.6	0	92.2	0	92.3	0	92.3	0	92.3
15	86.3 74.6	0	176.2	0	112.2	0	112.3	0	112.3	0	112.3
16	86.8 75.1	0	188.1	0	120.6	0	120.7	0	120.7	0	120.7
17	86.6 75.1	0	186.3	0	125.8	0	125.8	0	125.8	0	125.8
18	86.0 75.3	0	180.6	0	131.8	0	131.8	0	131.8	0	131.8
19	85.1 76.0	0	170.3	0	122.2	0	122.2	0	122.2	0	122.2
20	83.8 76.8	0	152.3	0	119.1	0	119.1	0	119.1	0	119.1
21	82.3 77.2	0	142.4	0	111.3	0	111.3	0	111.3	0	111.3
22	80.6 76.3	0	124.1	0	100.1	0	100.1	0	100.1	0	100.1
23	78.7 75.3	0	108.2	0	83.2	0	83.2	0	83.2	0	83.2
24	76.8 73.7	0	96.6	0	68.0	0	68.0	0	68.0	0	68.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	49.8	0	10.7	0	13.5	0	13.5	0	13.5
2	67.6	65.0	0	36.0	0	2.7	0	3.1	0	3.1	0	3.1
3	65.8	63.4	0	28.0	-73,510	1.0	-73,510	1.2	-73,510	1.2	-73,510	1.2
4	64.3	62.2	0	20.2	-151,228	0.0	-151,228	0.0	-151,228	0.0	-151,228	0.0
5	63.1	61.1	0	15.3	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	11.3	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	9.8	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	18.6	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	30.9	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	43.9	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	61.4	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	80.5	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	104.8	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	123.2	0	5.7	0	5.7	0	5.7	0	5.7
15	83.0	70.0	0	138.1	0	53.0	0	53.1	0	53.1	0	53.1
16	83.7	70.5	0	145.1	0	73.1	0	73.4	0	73.4	0	73.4
17	83.4	70.5	0	142.8	0	81.5	0	81.7	0	81.7	0	81.7
18	82.8	70.9	0	135.4	0	83.8	0	84.0	0	84.0	0	84.0
19	81.6	72.7	0	122.9	0	80.1	0	80.2	0	80.2	0	80.2
20	80.1	74.7	0	111.4	0	77.1	0	77.2	0	77.2	0	77.2
21	78.3	74.1	0	99.4	0	70.9	0	70.9	0	70.9	0	70.9
22	76.3	72.4	0	80.0	0	56.5	0	56.5	0	56.5	0	56.5
23	74.1	70.7	0	64.3	0	40.6	0	40.6	0	40.6	0	40.6
24	71.8	68.9	0	53.0	0	27.1	0	27.1	0	27.1	0	27.1

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-462,198	0.0	-462,198	0.0	-462,198	0.0
2	50.1	48.6	0	0.0	0	0.0	-602,346	0.0	-602,346	0.0	-602,346	0.0
3	48.4	46.9	0	0.0	0	0.0	-698,688	0.0	-698,688	0.0	-698,688	0.0
4	47.1	45.8	0	0.0	-43,684	0.0	-780,165	0.0	-780,165	0.0	-780,165	0.0
5	46.3	44.8	0	0.0	-738,559	0.0	-861,182	0.0	-861,182	0.0	-861,182	0.0
6	46.0	44.5	-83,484	0.0	-792,600	0.0	-929,517	0.0	-929,517	0.0	-929,517	0.0
7	46.8	45.3	-518,286	0.0	-942,687	0.0	-949,222	0.0	-949,222	0.0	-949,222	0.0
8	48.9	47.5	-414,673	0.0	-895,041	0.0	-895,041	0.0	-895,041	0.0	-895,041	0.0
9	52.2	49.9	-273,745	0.0	-810,176	0.0	-810,176	0.0	-810,176	0.0	-810,176	0.0
10	56.2	52.5	-165,727	0.0	-681,562	0.0	-681,562	0.0	-681,562	0.0	-681,562	0.0
11	60.4	54.4	-37,797	0.0	-498,549	0.0	-498,549	0.0	-498,549	0.0	-498,549	0.0
12	64.4	56.0	0	0.0	-291,281	0.0	-291,281	0.0	-291,281	0.0	-291,281	0.0
13	67.7	57.3	0	0.0	-114,364	0.0	-114,364	0.0	-114,364	0.0	-114,364	0.0
14	69.8	58.2	0	0.0	-29,485	0.0	-29,485	0.0	-29,485	0.0	-29,485	0.0
15	70.6	58.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	11.5	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	54.5	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	45.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	35.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	27.6	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	14.5	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	-29,256	2.9	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	-155,041	0.9	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	-286,621	0.0	-286,621	0.0	-286,621	0.0	-286,621	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

November		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OA DB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0 49.2	-357,960	0.0	0	0.0	-566,611	0.0	-566,611	0.0	-566,611	0.0
2	49.4 47.3	-500,659	0.0	0	0.0	-681,825	0.0	-681,825	0.0	-681,825	0.0
3	47.2 45.3	-590,742	0.0	0	0.0	-772,306	0.0	-772,306	0.0	-772,306	0.0
4	45.3 43.4	-684,527	0.0	-637,363	0.0	-872,069	0.0	-872,069	0.0	-872,069	0.0
5	43.9 42.2	-738,191	0.0	-886,938	0.0	-961,877	0.0	-961,877	0.0	-961,877	0.0
6	43.0 41.4	-773,706	0.0	-1,022,635	0.0	-1,022,635	0.0	-1,022,635	0.0	-1,022,635	0.0
7	42.7 41.2	-786,513	0.0	-1,067,842	0.0	-1,067,842	0.0	-1,067,842	0.0	-1,067,842	0.0
8	43.5 42.0	-721,150	0.0	-1,087,891	0.0	-1,087,891	0.0	-1,087,891	0.0	-1,087,891	0.0
9	45.9 44.0	-549,060	0.0	-1,017,718	0.0	-1,017,718	0.0	-1,017,718	0.0	-1,017,718	0.0
10	49.4 46.6	-361,100	0.0	-929,243	0.0	-929,243	0.0	-929,243	0.0	-929,243	0.0
11	53.8 48.6	-115,203	0.0	-770,510	0.0	-770,510	0.0	-770,510	0.0	-770,510	0.0
12	58.4 50.6	-35,439	0.0	-585,744	0.0	-585,744	0.0	-585,744	0.0	-585,744	0.0
13	62.8 52.6	0	0.0	-401,139	0.0	-401,139	0.0	-401,139	0.0	-401,139	0.0
14	66.3 54.5	0	0.0	-221,704	0.0	-221,704	0.0	-221,704	0.0	-221,704	0.0
15	68.7 55.7	0	0.0	-62,659	0.0	-62,659	0.0	-62,659	0.0	-62,659	0.0
16	69.5 56.1	0	0.0	-22,128	0.0	-22,128	0.0	-22,128	0.0	-22,128	0.0
17	69.2 55.8	0	8.5	-9,084	0.0	-9,084	0.0	-9,084	0.0	-9,084	0.0
18	68.3 57.0	0	32.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9 59.4	0	20.6	-3,254	0.0	-3,254	0.0	-3,254	0.0	-3,254	0.0
20	65.0 59.4	0	8.3	-9,985	0.0	-9,985	0.0	-9,985	0.0	-9,985	0.0
21	62.8 58.2	-49,140	0.0	-187,279	0.0	-187,279	0.0	-187,279	0.0	-187,279	0.0
22	60.2 56.1	-188,016	0.0	-283,014	0.0	-283,014	0.0	-283,014	0.0	-283,014	0.0
23	57.5 54.0	0	0.0	-373,662	0.0	-373,662	0.0	-373,662	0.0	-373,662	0.0
24	54.7 51.7	0	0.0	-478,545	0.0	-478,545	0.0	-478,545	0.0	-478,545	0.0

December		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OA DB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9 42.5	-684,504	0.0	-957,543	0.0	-957,543	0.0	-957,543	0.0	-957,543	0.0
2	43.2 41.1	-759,876	0.0	-1,041,255	0.0	-1,041,255	0.0	-1,041,255	0.0	-1,041,255	0.0
3	41.8 39.8	-836,389	0.0	-1,121,946	0.0	-1,121,946	0.0	-1,121,946	0.0	-1,121,946	0.0
4	40.7 38.7	-917,404	0.0	-1,183,397	0.0	-1,183,397	0.0	-1,183,397	0.0	-1,183,397	0.0
5	40.1 38.4	-967,992	0.0	-1,233,495	0.0	-1,233,495	0.0	-1,233,495	0.0	-1,233,495	0.0
6	39.9 38.4	-1,001,128	0.0	-1,280,454	0.0	-1,280,454	0.0	-1,280,454	0.0	-1,280,454	0.0
7	40.5 39.0	-991,480	0.0	-1,317,631	0.0	-1,317,631	0.0	-1,317,631	0.0	-1,317,631	0.0
8	42.2 40.7	-968,411	0.0	-1,298,468	0.0	-1,298,468	0.0	-1,298,468	0.0	-1,298,468	0.0
9	44.9 43.4	-846,952	0.0	-1,219,739	0.0	-1,219,739	0.0	-1,219,739	0.0	-1,219,739	0.0
10	48.2 45.8	-678,896	0.0	-1,113,994	0.0	-1,113,994	0.0	-1,113,994	0.0	-1,113,994	0.0
11	51.7 48.3	-484,255	0.0	-975,213	0.0	-975,213	0.0	-975,213	0.0	-975,213	0.0
12	55.0 50.7	-264,308	0.0	-806,083	0.0	-806,083	0.0	-806,083	0.0	-806,083	0.0
13	57.7 52.0	-64,265	0.0	-653,617	0.0	-653,617	0.0	-653,617	0.0	-653,617	0.0
14	59.5 52.6	-30,236	0.0	-510,714	0.0	-510,714	0.0	-510,714	0.0	-510,714	0.0
15	60.1 52.7	0	0.0	-419,617	0.0	-419,617	0.0	-419,617	0.0	-419,617	0.0
16	59.9 52.6	0	0.0	-355,042	0.0	-355,042	0.0	-355,042	0.0	-355,042	0.0
17	59.2 52.1	0	0.0	-347,786	0.0	-347,786	0.0	-347,786	0.0	-347,786	0.0
18	58.2 51.8	0	0.0	-377,795	0.0	-377,795	0.0	-377,795	0.0	-377,795	0.0
19	56.8 52.2	0	0.0	-425,198	0.0	-425,198	0.0	-425,198	0.0	-425,198	0.0
20	55.0 51.4	0	0.0	-493,308	0.0	-493,308	0.0	-493,308	0.0	-493,308	0.0
21	53.1 50.1	0	0.0	-577,635	0.0	-577,635	0.0	-577,635	0.0	-577,635	0.0
22	51.0 48.1	0	0.0	-676,517	0.0	-676,517	0.0	-676,517	0.0	-676,517	0.0
23	48.9 46.2	-186,167	0.0	-766,589	0.0	-766,589	0.0	-766,589	0.0	-766,589	0.0
24	46.9 44.1	-583,211	0.0	-846,920	0.0	-846,920	0.0	-846,920	0.0	-846,920	0.0

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**          T R A C E   6 0 0   A N A L Y S I S          **  
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**          by                **  
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CONRAD HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29807 (1 BLDG)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 8:42:25 8/16/94
Dataset Name: FGTYP518 .TM

System 1 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)					Mo/Hr: 6/17	*	Mo/Hr: 6/18	*	Mo/Hr: 13/ 1			
Outside Air ==)					OADB/WB/HR: 98/ 74/ 91.0	*	OADB: 96	*	OADB: 23			
					*		*					
	Space	Ret. Air	Ret. Air	Net	Perct	*	Space	Perct	*	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	55,076	0		55,076	33.23	*	57,730	38.96	*	-37,326	-37,326	20.76
Glass Solar	18,900	0		18,900	11.40	*	19,845	13.39	*	0	0	0.00
Glass Cond	9,189	0		9,189	5.55	*	8,565	5.78	*	-20,208	-20,208	11.24
Wall Cond	49,421	0		49,421	29.82	*	52,366	35.34	*	-73,640	-73,640	40.97
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	15,967			15,967	9.63	*	9,659	6.52	*	-26,120	-26,120	14.53
Sub Total==)	148,553	0		148,553	89.64	*	148,166	100.00	*	-157,294	-157,294	87.50
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	17,166	10.36	*	0	0.00	*	0	-22,466	12.50
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	148,553	0	0	165,719	100.00	*	148,166	100.00	*	-157,294	-179,760	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	11,800
Main Clg	13.8	165.7	154.9	11,800	75.9	64.6	73.9	63.7	60.3	73.2	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	11,800
Totals	13.8	165.7									Wall	5,232

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	3.8	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	450	450	Clg Cfm/Sqft	1.00	SADB	63.7	80.0
Main Htg	-179.8	11,800	66.3	80.0	Infil	419	523	Clg Cfm/Ton	854.46	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	11,800	11,800	Clg Sqft/Ton	854.46	Return	75.0	68.0
Preheat	-0.0	11,800	66.3	63.7	Mincfm	0	0	Clg Btuh/Sqft	14.04	Ret/OA	75.9	66.3
Reheat	0.0	0	0.0	0.0	Return	11,800	11,800	No. People	30	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	450	450	Htg % OA	3.8	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-179.8				Auxil	0	0	Htg Btuh/SqFt	-15.23	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-158,991	0.0	-89,999	0.0	-89,999	0.0	-89,999	0.0	-89,999	0.0
2	32.9	30.7	-142,333	0.0	-96,205	0.0	-96,205	0.0	-96,205	0.0	-96,205	0.0
3	33.1	31.3	-130,415	0.0	-101,018	0.0	-101,018	0.0	-101,018	0.0	-101,018	0.0
4	33.9	32.1	-113,056	0.0	-103,277	0.0	-103,277	0.0	-103,277	0.0	-103,277	0.0
5	35.2	33.5	-86,420	0.0	-107,144	0.0	-107,144	0.0	-107,144	0.0	-107,144	0.0
6	37.0	35.4	-91,915	0.0	-109,939	0.0	-109,939	0.0	-109,939	0.0	-109,939	0.0
7	39.0	37.6	-94,660	0.0	-111,483	0.0	-111,483	0.0	-111,483	0.0	-111,483	0.0
8	41.3	40.1	-93,620	0.0	-110,889	0.0	-110,889	0.0	-110,889	0.0	-110,889	0.0
9	43.7	42.5	-89,586	0.0	-107,782	0.0	-107,782	0.0	-107,782	0.0	-107,782	0.0
10	46.1	44.0	-79,725	0.0	-104,823	0.0	-104,823	0.0	-104,823	0.0	-104,823	0.0
11	48.4	45.0	-68,841	0.0	-95,918	0.0	-95,918	0.0	-95,918	0.0	-95,918	0.0
12	50.5	45.6	-53,747	0.0	-88,157	0.0	-88,157	0.0	-88,157	0.0	-88,157	0.0
13	52.2	46.1	-40,892	0.0	-78,045	0.0	-78,045	0.0	-78,045	0.0	-78,045	0.0
14	53.5	46.4	-25,587	0.0	-67,125	0.0	-67,125	0.0	-67,125	0.0	-67,125	0.0
15	54.3	46.3	-12,736	0.0	-59,677	0.0	-59,677	0.0	-59,677	0.0	-59,677	0.0
16	54.6	46.1	-1,616	0.0	-50,229	0.0	-50,229	0.0	-50,229	0.0	-50,229	0.0
17	54.0	45.9	0	0.0	-44,385	0.0	-44,385	0.0	-44,385	0.0	-44,385	0.0
18	52.5	45.0	0	0.0	-43,036	0.0	-43,036	0.0	-43,036	0.0	-43,036	0.0
19	50.1	44.8	0	0.0	-45,593	0.0	-45,593	0.0	-45,593	0.0	-45,593	0.0
20	47.1	43.3	-11,982	0.0	-50,403	0.0	-50,403	0.0	-50,403	0.0	-50,403	0.0
21	43.7	40.4	-24,267	0.0	-57,886	0.0	-57,886	0.0	-57,886	0.0	-57,886	0.0
22	40.4	37.3	-33,421	0.0	-65,987	0.0	-65,987	0.0	-65,987	0.0	-65,987	0.0
23	37.3	34.9	-43,803	0.0	-74,510	0.0	-74,510	0.0	-74,510	0.0	-74,510	0.0
24	34.9	32.6	-53,542	0.0	-83,605	0.0	-83,605	0.0	-83,605	0.0	-83,605	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-52,996	0.0	-75,592	0.0	-75,592	0.0	-75,592	0.0	-75,592	0.0
2	39.7	37.1	-62,229	0.0	-80,855	0.0	-80,855	0.0	-80,855	0.0	-80,855	0.0
3	37.8	35.1	-68,229	0.0	-87,172	0.0	-87,172	0.0	-87,172	0.0	-87,172	0.0
4	36.3	33.8	-75,957	0.0	-91,375	0.0	-91,375	0.0	-91,375	0.0	-91,375	0.0
5	35.1	32.6	-80,283	0.0	-99,160	0.0	-99,160	0.0	-99,160	0.0	-99,160	0.0
6	34.4	32.0	-84,718	0.0	-102,816	0.0	-102,816	0.0	-102,816	0.0	-102,816	0.0
7	34.1	31.9	-89,667	0.0	-107,856	0.0	-107,856	0.0	-107,856	0.0	-107,856	0.0
8	34.6	32.4	-87,791	0.0	-109,932	0.0	-109,932	0.0	-109,932	0.0	-109,932	0.0
9	36.0	33.8	-83,549	0.0	-110,167	0.0	-110,167	0.0	-110,167	0.0	-110,167	0.0
10	38.2	34.7	-74,318	0.0	-108,461	0.0	-108,461	0.0	-108,461	0.0	-108,461	0.0
11	40.9	36.2	-62,093	0.0	-103,671	0.0	-103,671	0.0	-103,671	0.0	-103,671	0.0
12	43.9	37.4	-48,122	0.0	-97,281	0.0	-97,281	0.0	-97,281	0.0	-97,281	0.0
13	46.9	39.4	-34,973	0.0	-85,796	0.0	-85,796	0.0	-85,796	0.0	-85,796	0.0
14	49.7	41.4	-19,248	0.0	-76,789	0.0	-76,789	0.0	-76,789	0.0	-76,789	0.0
15	51.8	42.8	-5,496	0.0	-64,973	0.0	-64,973	0.0	-64,973	0.0	-64,973	0.0
16	53.2	43.9	0	0.0	-55,937	0.0	-55,937	0.0	-55,937	0.0	-55,937	0.0
17	53.7	44.2	0	0.0	-50,427	0.0	-50,427	0.0	-50,427	0.0	-50,427	0.0
18	53.4	44.4	0	0.0	-44,066	0.0	-44,066	0.0	-44,066	0.0	-44,066	0.0
19	52.7	44.4	0	0.0	-47,130	0.0	-47,130	0.0	-47,130	0.0	-47,130	0.0
20	51.5	45.2	0	0.0	-47,860	0.0	-47,860	0.0	-47,860	0.0	-47,860	0.0
21	50.0	44.6	0	0.0	-51,310	0.0	-51,310	0.0	-51,310	0.0	-51,310	0.0
22	48.1	43.3	-5,120	0.0	-58,034	0.0	-58,034	0.0	-58,034	0.0	-58,034	0.0
23	46.1	41.8	-35,112	0.0	-63,559	0.0	-63,559	0.0	-63,559	0.0	-63,559	0.0
24	43.9	40.1	-43,601	0.0	-69,734	0.0	-69,734	0.0	-69,734	0.0	-69,734	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-3,993	0.0	0	0.0	-30,180	0.0	-30,180	0.0	-30,180	0.0
2	48.7	44.6	-14,287	0.0	0	0.0	-38,982	0.0	-38,982	0.0	-38,982	0.0
3	46.6	42.9	-23,291	0.0	0	0.0	-44,678	0.0	-44,678	0.0	-44,678	0.0
4	44.9	41.4	-29,194	0.0	0	0.0	-52,625	0.0	-52,625	0.0	-52,625	0.0
5	43.9	40.8	-36,410	0.0	-41,746	0.0	-57,763	0.0	-57,763	0.0	-57,763	0.0
6	43.5	40.8	-40,746	0.0	-64,928	0.0	-64,928	0.0	-64,928	0.0	-64,928	0.0
7	44.0	41.4	-46,315	0.0	-67,828	0.0	-67,828	0.0	-67,828	0.0	-67,828	0.0
8	45.4	42.7	-41,643	0.0	-68,940	0.0	-68,940	0.0	-68,940	0.0	-68,940	0.0
9	47.7	44.3	-35,340	0.0	-69,789	0.0	-69,789	0.0	-69,789	0.0	-69,789	0.0
10	50.6	45.8	-25,229	0.0	-64,279	0.0	-64,279	0.0	-64,279	0.0	-64,279	0.0
11	53.9	47.4	-11,095	0.0	-55,486	0.0	-55,486	0.0	-55,486	0.0	-55,486	0.0
12	57.4	49.0	0	0.0	-45,703	0.0	-45,703	0.0	-45,703	0.0	-45,703	0.0
13	60.7	50.8	0	0.0	-35,048	0.0	-35,048	0.0	-35,048	0.0	-35,048	0.0
14	63.6	52.7	0	0.0	-21,290	0.0	-21,290	0.0	-21,290	0.0	-21,290	0.0
15	65.9	53.7	0	0.0	-10,726	0.0	-10,726	0.0	-10,726	0.0	-10,726	0.0
16	67.3	54.4	0	0.0	-2,739	0.0	-2,739	0.0	-2,739	0.0	-2,739	0.0
17	67.8	54.6	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	5.1	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	4.3	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.4	0	0.0	0	0.0	0	0.0	0	0.0
24	54.2	49.4	0	0.0	-19,993	0.0	-19,993	0.0	-19,993	0.0	-19,993	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2	51.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	53.9	51.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	55.9	52.1	0	0.0	-25,958	0.0	-25,958	0.0	-25,958	0.0	-25,958	0.0
10	58.9	53.2	0	0.0	-26,648	0.0	-26,648	0.0	-26,648	0.0	-26,648	0.0
11	62.6	55.2	0	0.0	-18,119	0.0	-18,119	0.0	-18,119	0.0	-18,119	0.0
12	66.5	57.3	0	0.0	-7,653	0.0	-7,653	0.0	-7,653	0.0	-7,653	0.0
13	70.2	59.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	6.4	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	7.3	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	7.9	0	0.0	0	0.0	0	0.0	0	0.0
18	74.9	61.7	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
19	73.7	62.0	0	7.6	0	0.0	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	6.7	0	1.1	0	1.1	0	1.1	0	1.1
21	70.2	63.3	0	5.7	0	2.0	0	2.0	0	2.0	0	2.0
22	68.0	62.5	0	4.8	0	1.5	0	1.5	0	1.5	0	1.5
23	65.7	60.5	0	3.7	0	0.7	0	0.7	0	0.7	0	0.7
24	63.4	58.5	0	2.6	0	0.1	0	0.1	0	0.1	0	0.1

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5			0	4.5		0		1.8		0		2.1		0		2.1		0		2.1
2	65.7	61.5			0	3.7		0		1.2		0		1.3		0		1.3		0		1.3
3	63.6	59.7			0	2.9		0		0.6		0		0.6		0		0.6		0		0.6
4	61.8	58.4			0	2.1		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1			0	1.7		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5			0	1.1		0		0.0		0		0.0		0		0.0		0		0.0
7	59.4	56.5			0	1.2		0		0.0		0		0.0		0		0.0		0		0.0
8	60.1	56.3			0	1.5		0		0.0		0		0.0		0		0.0		0		0.0
9	62.4	56.3			0	1.9		0		0.0		0		0.0		0		0.0		0		0.0
10	65.7	57.2			0	2.8		0		0.0		0		0.0		0		0.0		0		0.0
11	69.9	58.9			0	4.0		0		0.0		0		0.0		0		0.0		0		0.0
12	74.3	60.9			0	5.2		0		0.0		0		0.0		0		0.0		0		0.0
13	78.5	63.7			0	6.6		0		0.0		0		0.0		0		0.0		0		0.0
14	81.9	65.3			0	7.8		0		0.0		0		0.0		0		0.0		0		0.0
15	84.1	66.9			0	9.0		0		3.5		0		3.5		0		3.5		0		3.5
16	84.9	67.1			0	9.9		0		4.9		0		4.9		0		4.9		0		4.9
17	84.6	67.3			0	10.6		0		5.5		0		5.6		0		5.6		0		5.6
18	83.8	67.1			0	10.8		0		5.9		0		5.9		0		5.9		0		5.9
19	82.4	67.5			0	10.6		0		5.9		0		5.9		0		5.9		0		5.9
20	80.6	68.9			0	9.6		0		5.4		0		5.4		0		5.4		0		5.4
21	78.5	71.0			0	8.7		0		5.1		0		5.1		0		5.1		0		5.1
22	76.1	69.9			0	7.6		0		4.7		0		4.7		0		4.7		0		4.7
23	73.4	68.0			0	6.4		0		3.8		0		3.8		0		3.8		0		3.8
24	70.8	65.5			0	5.4		0		3.0		0		3.0		0		3.0		0		3.0

June	----- Design -----					----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	
1	74.7	70.1	0		8.0	0		4.4	0		4.9	0		4.9	0		4.9	0		4.9	
2	72.6	68.4	0		6.9	0		3.8	0		4.1	0		4.1	0		4.1	0		4.1	
3	70.9	67.3	0		6.2	0		3.0	0		3.2	0		3.2	0		3.2	0		3.2	
4	69.6	66.5	0		5.4	0		2.4	0		2.5	0		2.5	0		2.5	0		2.5	
5	68.7	65.8	0		4.8	0		1.7	0		1.7	0		1.7	0		1.7	0		1.7	
6	68.5	65.7	0		4.3	0		1.2	0		1.2	0		1.2	0		1.2	0		1.2	
7	69.0	66.3	0		4.3	0		1.0	0		1.0	0		1.0	0		1.0	0		1.0	
8	70.6	66.9	0		4.8	0		0.9	0		0.9	0		0.9	0		0.9	0		0.9	
9	73.0	67.7	0		5.5	0		1.5	0		1.5	0		1.5	0		1.5	0		1.5	
10	76.1	68.1	0		6.4	0		2.5	0		2.5	0		2.5	0		2.5	0		2.5	
11	79.5	69.1	0		7.6	0		3.5	0		3.5	0		3.5	0		3.5	0		3.5	
12	82.9	70.1	0		8.9	0		4.6	0		4.6	0		4.6	0		4.6	0		4.6	
13	86.0	71.0	0		10.1	0		5.8	0		5.8	0		5.8	0		5.8	0		5.8	
14	88.4	72.5	0		11.1	0		6.9	0		7.0	0		7.0	0		7.0	0		7.0	
15	90.0	74.0	0		12.3	0		8.2	0		8.2	0		8.2	0		8.2	0		8.2	
16	90.5	73.7	0		13.3	0		8.8	0		8.8	0		8.8	0		8.8	0		8.8	
17	90.3	74.2	0		13.8	0		9.3	0		9.3	0		9.3	0		9.3	0		9.3	
18	89.4	73.9	0		13.8	0		9.5	0		9.5	0		9.5	0		9.5	0		9.5	
19	88.1	74.5	0		13.8	0		9.5	0		9.5	0		9.5	0		9.5	0		9.5	
20	86.4	75.3	0		12.7	0		9.0	0		9.0	0		9.0	0		9.0	0		9.0	
21	84.3	76.5	0		12.0	0		8.5	0		8.5	0		8.5	0		8.5	0		8.5	
22	81.9	75.7	0		10.9	0		7.8	0		7.8	0		7.8	0		7.8	0		7.8	
23	79.5	74.0	0		9.9	0		7.0	0		7.0	0		7.0	0		7.0	0		7.0	
24	77.0	72.1	0		8.8	0		6.0	0		6.0	0		6.0	0		6.0	0		6.0	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

July		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7 70.5	0	7.9	0	3.8	0	4.2	0	4.2	0	4.2
2	72.4 69.4	0	6.9	0	3.1	0	3.3	0	3.3	0	3.3
3	71.3 68.4	0	6.0	0	2.5	0	2.6	0	2.6	0	2.6
4	70.5 67.7	0	5.4	0	2.0	0	2.0	0	2.0	0	2.0
5	70.0 67.4	0	4.9	0	1.4	0	1.5	0	1.5	0	1.5
6	69.9 67.5	0	4.5	0	0.9	0	1.0	0	1.0	0	1.0
7	70.3 68.0	0	4.5	0	0.7	0	0.7	0	0.7	0	0.7
8	71.7 69.0	0	4.7	0	0.8	0	0.8	0	0.8	0	0.8
9	73.7 69.5	0	5.5	0	1.4	0	1.5	0	1.5	0	1.5
10	76.2 70.6	0	6.3	0	2.5	0	2.5	0	2.5	0	2.5
11	78.9 71.8	0	7.2	0	3.6	0	3.6	0	3.6	0	3.6
12	81.4 73.0	0	8.5	0	4.7	0	4.7	0	4.7	0	4.7
13	83.4 74.4	0	9.7	0	6.0	0	6.0	0	6.0	0	6.0
14	84.8 74.8	0	10.9	0	7.0	0	7.0	0	7.0	0	7.0
15	85.2 75.0	0	11.9	0	7.9	0	7.9	0	7.9	0	7.9
16	85.1 75.0	0	12.7	0	8.5	0	8.5	0	8.5	0	8.5
17	84.6 74.7	0	13.5	0	8.8	0	8.8	0	8.8	0	8.8
18	83.8 74.6	0	13.6	0	9.0	0	9.0	0	9.0	0	9.0
19	82.7 74.6	0	13.1	0	8.9	0	8.9	0	8.9	0	8.9
20	81.4 74.4	0	12.4	0	8.3	0	8.3	0	8.3	0	8.3
21	79.9 74.9	0	11.5	0	7.7	0	7.7	0	7.7	0	7.7
22	78.4 74.0	0	10.5	0	6.9	0	6.9	0	6.9	0	6.9
23	76.8 72.7	0	9.4	0	5.9	0	5.9	0	5.9	0	5.9
24	75.2 71.6	0	8.5	0	5.1	0	5.1	0	5.1	0	5.1

August		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0 72.0	0	7.8	0	4.2	0	4.7	0	4.7	0	4.7
2	73.2 70.3	0	6.7	0	3.6	0	3.9	0	3.9	0	3.9
3	71.7 68.9	0	5.8	0	2.8	0	2.9	0	2.9	0	2.9
4	70.4 67.8	0	5.2	0	2.2	0	2.3	0	2.3	0	2.3
5	69.5 66.8	0	4.5	0	1.6	0	1.7	0	1.7	0	1.7
6	68.9 66.4	0	4.1	0	1.0	0	1.0	0	1.0	0	1.0
7	68.7 66.4	0	3.9	0	0.5	0	0.5	0	0.5	0	0.5
8	69.2 66.8	0	4.4	0	0.4	0	0.4	0	0.4	0	0.4
9	70.8 67.7	0	4.9	0	0.7	0	0.7	0	0.7	0	0.7
10	73.2 67.7	0	5.9	0	1.6	0	1.6	0	1.6	0	1.6
11	76.2 68.8	0	7.0	0	2.6	0	2.6	0	2.6	0	2.6
12	79.3 70.3	0	8.3	0	4.0	0	4.0	0	4.0	0	4.0
13	82.3 72.2	0	9.5	0	5.1	0	5.1	0	5.1	0	5.1
14	84.7 73.7	0	10.7	0	6.4	0	6.4	0	6.4	0	6.4
15	86.3 74.6	0	11.9	0	7.5	0	7.5	0	7.5	0	7.5
16	86.8 75.1	0	12.9	0	8.5	0	8.5	0	8.5	0	8.5
17	86.6 75.1	0	13.3	0	9.0	0	9.0	0	9.0	0	9.0
18	86.0 75.3	0	13.5	0	9.4	0	9.4	0	9.4	0	9.4
19	85.1 76.0	0	12.9	0	9.1	0	9.1	0	9.1	0	9.1
20	83.8 76.8	0	12.1	0	8.6	0	8.6	0	8.6	0	8.6
21	82.3 77.2	0	11.2	0	8.1	0	8.1	0	8.1	0	8.1
22	80.6 76.3	0	10.2	0	7.3	0	7.3	0	7.3	0	7.3
23	78.7 75.3	0	9.1	0	6.4	0	6.4	0	6.4	0	6.4
24	76.8 73.7	0	8.3	0	5.5	0	5.5	0	5.5	0	5.5

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	5.4	0	1.9	0	2.3	0	2.3	0	2.3
2	67.6	65.0	0	4.2	0	1.1	0	1.3	0	1.3	0	1.3
3	65.8	63.4	0	3.4	0	0.5	0	0.6	0	0.6	0	0.6
4	64.3	62.2	0	2.6	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	2.2	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	3.1	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	5.5	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	6.8	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	8.3	0	0.5	0	0.5	0	0.5	0	0.5
15	83.0	70.0	0	9.5	0	4.9	0	5.0	0	5.0	0	5.0
16	83.7	70.5	0	10.5	0	5.5	0	5.6	0	5.6	0	5.6
17	83.4	70.5	0	11.0	0	6.2	0	6.2	0	6.2	0	6.2
18	82.8	70.9	0	10.8	0	6.4	0	6.4	0	6.4	0	6.4
19	81.6	72.7	0	10.1	0	6.2	0	6.2	0	6.2	0	6.2
20	80.1	74.7	0	9.5	0	5.9	0	5.9	0	5.9	0	5.9
21	78.3	74.1	0	8.7	0	5.5	0	5.5	0	5.5	0	5.5
22	76.3	72.4	0	7.5	0	4.7	0	4.7	0	4.7	0	4.7
23	74.1	70.7	0	6.5	0	3.8	0	3.8	0	3.8	0	3.8
24	71.8	68.9	0	5.5	0	3.1	0	3.1	0	3.1	0	3.1

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	50.1	48.6	0	0.0	0	0.0	-30,055	0.0	-30,055	0.0	-30,055	0.0
3	48.4	46.9	0	0.0	0	0.0	-38,614	0.0	-38,614	0.0	-38,614	0.0
4	47.1	45.8	0	0.0	0	0.0	-46,633	0.0	-46,633	0.0	-46,633	0.0
5	46.3	44.8	0	0.0	-12,346	0.0	-51,298	0.0	-51,298	0.0	-51,298	0.0
6	46.0	44.5	0	0.0	-59,262	0.0	-59,262	0.0	-59,262	0.0	-59,262	0.0
7	46.8	45.3	0	0.0	-61,969	0.0	-61,969	0.0	-61,969	0.0	-61,969	0.0
8	48.9	47.5	-24,146	0.0	-62,683	0.0	-62,683	0.0	-62,683	0.0	-62,683	0.0
9	52.2	49.9	-27,350	0.0	-59,527	0.0	-59,527	0.0	-59,527	0.0	-59,527	0.0
10	56.2	52.5	-17,051	0.0	-52,634	0.0	-52,634	0.0	-52,634	0.0	-52,634	0.0
11	60.4	54.4	-3,776	0.0	-43,502	0.0	-43,502	0.0	-43,502	0.0	-43,502	0.0
12	64.4	56.0	0	0.0	-31,103	0.0	-31,103	0.0	-31,103	0.0	-31,103	0.0
13	67.7	57.3	0	0.0	-17,160	0.0	-17,160	0.0	-17,160	0.0	-17,160	0.0
14	69.8	58.2	0	0.0	-5,761	0.0	-5,761	0.0	-5,761	0.0	-5,761	0.0
15	70.6	58.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	5.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	4.3	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	3.4	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	2.5	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.5	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

01 Card - Job Information

Project: SINGAL SCHOOL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 25810 (1 BUILDING)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA						10		

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	YES

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	SCHOOL_OFFS

-----CARD 20-- General Room Parameters-----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	7400	10	3	0		11.3	2		

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	2	BLOCK	3822	10	3	0		24.7			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	Heating T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				199			
2	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	86	11.75		196	225			
1	2	61.75	11.75		196	315			
1	3	285.25	11.75		196	45			
1	4	61.75	11.75		196	135			
1	5	86	11.75		196	225			
1	6	86	11.75		196	0			
1	7	61.75	11.75		196	90			
1	8	285.25	11.75		196	180			
1	9	61.75	11.75		196	270			
1	10	86	11.75		196	0			
1	11	86	11.75		196	135			
1	12	61.75	11.75		196	225			
1	13	285.25	11.75		196	315			
1	14	61.75	11.75		196	45			
1	15	86	11.75		196	135			
2	1	114.75	25.25		196	0			
2	2	114.75	25.25		196	135			
2	3	114.75	25.25		196	225			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	2.5	8	9	1.03	.82					
1	2	2.5	8	4	1.03	.82					
1	3	2.5	8	39	1.03	.82					
1	4	2.5	8	4	1.03	.82					
1	5	2.5	8	9	1.03	.82					
1	6	2.5	8	9	1.03	.82					
1	7	2.5	8	4	1.03	.82					
1	8	2.5	8	31	1.03	.82					
1	9	2.5	8	4	1.03	.82					
1	10	2.5	8	9	1.03	.82					
1	11	2.5	8	9	1.03	.82					
1	12	2.5	8	4	1.03	.82					
1	13	2.5	8	24	1.03	.82					
1	14	2.5	8	4	1.03	.82					
1	15	2.5	8	9	1.03	.82					
2	1	2.5	8	2	1.03	.82					
2	2	2.5	8	2	1.03	.82					
2	3	2.5	8	2	1.03	.82					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	TYPE10	TYPE10	YES	YES						
2	TYPE10	TYPE10	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	434	PEOPLE	255	325	2	WATT-SF	ASHRAE2				
2	100	PEOPLE	345	435	2.6	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	40315	BTUH	TYPE10						
2	1	MISS.	30	KW	TYPE10						

-----CARD 29--- Room Airflows -----

-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
Room Number	-----Cooling----- Value	Units	-----Heating----- Value	Units	-----Cooling----- Value	Units	-----Heating----- Value	Units	Value Units
1	15	CFM-P	15	CFM-P	.1	CFM-SF	.15	CFM-SF	

```

-----CARD 29--- Room Airflows -----
-----Ventilation-----
Room  -----Cooling-----  -----Heating-----
Number Value      Units      Value      Units      Value      Units      Value      Units
2      15          CFM-P      15          CFM-P      .1          CFM-SF      .15         CFM-SF

```

```

----- System Section Alternative #1 -----

```

```

-----CARD 39-- System Alternative -----

```

```

Number      Description
1           FAN COIL UNITS

```

```

-----CARD 40--- System Type -----

```

```

-----OPTIONAL VENTILATION SYSTEM-----
System      Ventil      Fan
Set  System  Deck    Cooling Heating Cooling Heating Static
Number Type   Location SADBvh  SADBvh  Schedule Schedule Pressure
1      FC
2      SZ

```

```

-----CARD 41-- Zone Assignment -----

```

```

System
Set      Ref #1      Ref #2      Ref #3      Ref #4      Ref #5      Ref #6
Number   Begin   End   Begin   End   Begin   End   Begin   End   Begin   End   Begin   End
1         1       1         1       1         1       1         1       1         1       1
2         2       2         2       2         2       2         2       2         2       2

```

```

-----CARD 42--- Fan SP and Duct Parameters-----

```

```

System Cool Heat Return Mn Exh Aux Rm Exh Cool Return Supply Supply Return
Set      Fan  Fan  Fan  Fan  Fan  Fan  Fan Mtr Fan Mtr Duct Duct Air
Number  SP   SP   SP   SP   SP   SP   Loc   Loc   Ht Gn  Loc   Path
1
2

```

```

-----CARD 48-- Cooling Capacity Overrides -----

```

```

System      Misc      -----MAIN COOLING-----  ---AUX COOLING---
Set  People  Lights  Loads  Capacity Capacity Capacity Capacity Capacity Capacity
Number Variance Variance Variance Value  Units  Sizing  Location Value  Units
1                                     80

```

-----CARD 48-- Cooling Capacity Overrides -----

System			Misc		-----MAIN COOLING-----			---AUX COOLING---		
Set	People	Lights	Loads	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity
Number	Variance	Variance	Variance	Value	Units	Sizing	Location	Value	Units	
2			80							

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

TYPE10 FT GORDON

YES AVAILABLE (100%)

System:

FC FAN COIL

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: TYPE10
Project: FT GORDON
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: DSGN

Hour Util Percent

0 100
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: WKDY Ending Day Type: WKDY

Hour Util Percent

0 0
6 100
18 0
24

Starting Month: JAN Ending Month: DEC
Starting Day Type: SAT Ending Day Type: SUN

Hour Util Percent

0 100
24

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

Trane Air Conditioning Economics
By: Trane Customer Direct Service Network

V 600
PAGE 1

```
*****
*****
**                                     **
**          TRACE    600    ANALYSIS    **
**                                     **
**          by          **
**                                     **
*****
*****
```

NELSON HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29801

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 8:13:58 8/15/94
Dataset Name: FGTYP515 .TM

AIRFLOW - ALTERNATIVE 1
TV STUDIO

----- S Y S T E M S U M M A R Y -----
(Design Airflow Quantities)

System Number	System Type	Main					Auxil. Supply Airflow (Cfm)	Room Exhaust Airflow (Cfm)
		Outside Airflow (Cfm)	Cooling Airflow (Cfm)	Heating Airflow (Cfm)	Return Airflow (Cfm)	Exhaust Airflow (Cfm)		
1	SZ	1,620	37,700	37,700	40,013	3,933	0	0
Totals		1,620	37,700	37,700	40,013	3,933	0	0

CAPACITY - ALTERNATIVE 1
TV STUDIO

----- S Y S T E M S U M M A R Y -----
(Design Capacity Quantities)

		Cooling					Heating					
		Main Sys.	Aux. Sys.	Opt. Vent	Cooling	Main Sys.	Aux. Sys.	Preheat	Reheat	Humidif.	Opt. Vent	Heating
System	System	Capacity	Capacity	Capacity	Totals	Capacity	Capacity	Capacity	Capacity	Capacity	Capacity	Totals
Number	Type	(Tons)	(Tons)	(Tons)	(Tons)	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(Btuh)
1	SZ	47.0	0.0	0.0	47.0	-698,828	0	0	0	0	0	-698,828
Totals		47.0	0.0	0.0	47.0	-698,828	0	0	0	0	0	-698,828

The building peaked at hour 16 month 8 with a capacity of 47.0 tons

ENGINEERING CHECKS - ALTERNATIVE 1
TV STUDIO

----- E N G I N E E R I N G C H E C K S -----

System Number	Main/ Auxiliary	System Type	Percent Outside Air	Cooling				Heating		Floor Area Sq Ft
				Cfm/ Sq Ft	Cfm/ Ton	Sq Ft /Ton	Btuh/ Sq Ft	Cfm/ Sq Ft	Btuh/ Sq Ft	
1	Main	SZ	4.30	1.00	802.5	802.5	14.95	1.00	-18.54	37,700

System 1 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)		Mo/Hr: 8/16				Mo/Hr: 6/18				Mo/Hr: 13/ 1		
Outside Air ==)		OADB/WB/HR: 96/ 76/105.0				OADB: 96				OADB: 23		
	Space	Ret. Air	Ret. Air	Net	Percent		Space	Percent		Space Peak	Coil Peak	Percent
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	72,081	0		72,081	12.79	*	92,222	19.35	*	-59,626	-59,626	8.53
Glass Solar	106,260	0		106,260	18.85	*	84,525	17.74	*	0	0	0.00
Glass Cond	48,505	0		48,505	8.60	*	51,241	10.75	*	-122,383	-122,383	17.51
Wall Cond	180,179	0		180,179	31.96	*	205,817	43.19	*	-320,477	-320,477	45.86
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	83,568			83,568	14.82	*	42,696	8.96	*	-115,465	-115,465	16.52
Sub Total==)	490,594	0		490,594	87.02	*	476,502	100.00	*	-617,950	-617,950	88.43
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	73,169	12.98	*	0	0.00	*	0	-80,877	11.57
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	490,594	0	0	563,763	100.00	*	476,502	100.00	*	-617,950	-698,828	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
Main Clg	47.0	563.8	488.3	37,700	75.9	64.9	75.2	63.6	60.3	73.3	Floor	37,700
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Totals	47.0	563.8									Roof	18,850
											Wall	23,128
												2,415
												10

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)--		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	4.3	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	1,620	1,620	Clg Cfm/Sqft	1.00	SADB	63.6	82.8
Main Htg	-698.8	37,700	66.1	82.8	Infil	1,850	2,313	Clg Cfm/Ton	802.46	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	37,700	37,700	Clg Sqft/Ton	802.46	Return	75.0	68.0
Preheat	-0.0	37,700	66.1	63.6	Mincfm	0	0	Clg Btuh/Sqft	14.95	Ret/OA	75.9	66.1
Reheat	0.0	0	0.0	0.0	Return	37,700	37,700	No. People	108	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	1,620	1,620	Htg % OA	4.3	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0
Total	-698.8				Auxil	0	0	Htg Btuh/Sqft	-18.54	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
AHU'S

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-620,093	0.0	-331,745	0.0	-331,745	0.0	-331,745	0.0	-331,745	0.0
2	32.9	30.7	-553,296	0.0	-354,099	0.0	-354,099	0.0	-354,099	0.0	-354,099	0.0
3	33.1	31.3	-404,835	0.0	-369,847	0.0	-369,847	0.0	-369,847	0.0	-369,847	0.0
4	33.9	32.1	-297,680	0.0	-376,737	0.0	-376,737	0.0	-376,737	0.0	-376,737	0.0
5	35.2	33.5	-324,800	0.0	-390,805	0.0	-390,805	0.0	-390,805	0.0	-390,805	0.0
6	37.0	35.4	-337,020	0.0	-400,232	0.0	-400,232	0.0	-400,232	0.0	-400,232	0.0
7	39.0	37.6	-346,233	0.0	-406,471	0.0	-406,471	0.0	-406,471	0.0	-406,471	0.0
8	41.3	40.1	-340,701	0.0	-402,762	0.0	-402,762	0.0	-402,762	0.0	-402,762	0.0
9	43.7	42.5	-313,113	0.0	-382,152	0.0	-382,152	0.0	-382,152	0.0	-382,152	0.0
10	46.1	44.0	-254,468	0.0	-355,262	0.0	-355,262	0.0	-355,262	0.0	-355,262	0.0
11	48.4	45.0	-193,886	0.0	-318,301	0.0	-318,301	0.0	-318,301	0.0	-318,301	0.0
12	50.5	45.6	-117,937	0.0	-282,914	0.0	-282,914	0.0	-282,914	0.0	-282,914	0.0
13	52.2	46.1	-49,500	0.0	-242,068	0.0	-242,068	0.0	-242,068	0.0	-242,068	0.0
14	53.5	46.4	0	0.0	-203,352	0.0	-203,352	0.0	-203,352	0.0	-203,352	0.0
15	54.3	46.3	0	0.0	-172,938	0.0	-172,938	0.0	-172,938	0.0	-172,938	0.0
16	54.6	46.1	0	0.0	-146,256	0.0	-146,256	0.0	-146,256	0.0	-146,256	0.0
17	54.0	45.9	0	0.0	-133,191	0.0	-133,191	0.0	-133,191	0.0	-133,191	0.0
18	52.5	45.0	0	0.0	-138,693	0.0	-138,693	0.0	-138,693	0.0	-138,693	0.0
19	50.1	44.8	0	0.0	-154,345	0.0	-154,345	0.0	-154,345	0.0	-154,345	0.0
20	47.1	43.3	0	0.0	-183,249	0.0	-183,249	0.0	-183,249	0.0	-183,249	0.0
21	43.7	40.4	0	0.0	-211,518	0.0	-211,518	0.0	-211,518	0.0	-211,518	0.0
22	40.4	37.3	0	0.0	-241,941	0.0	-241,941	0.0	-241,941	0.0	-241,941	0.0
23	37.3	34.9	-148,758	0.0	-274,378	0.0	-274,378	0.0	-274,378	0.0	-274,378	0.0
24	34.9	32.6	-191,537	0.0	-309,265	0.0	-309,265	0.0	-309,265	0.0	-309,265	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-205,612	0.0	-282,292	0.0	-282,292	0.0	-282,292	0.0	-282,292	0.0
2	39.7	37.1	-229,848	0.0	-301,634	0.0	-301,634	0.0	-301,634	0.0	-301,634	0.0
3	37.8	35.1	-260,588	0.0	-332,751	0.0	-332,751	0.0	-332,751	0.0	-332,751	0.0
4	36.3	33.8	-289,717	0.0	-347,263	0.0	-347,263	0.0	-347,263	0.0	-347,263	0.0
5	35.1	32.6	-305,561	0.0	-368,538	0.0	-368,538	0.0	-368,538	0.0	-368,538	0.0
6	34.4	32.0	-319,619	0.0	-390,338	0.0	-390,338	0.0	-390,338	0.0	-390,338	0.0
7	34.1	31.9	-329,329	0.0	-406,386	0.0	-406,386	0.0	-406,386	0.0	-406,386	0.0
8	34.6	32.4	-329,202	0.0	-414,063	0.0	-414,063	0.0	-414,063	0.0	-414,063	0.0
9	36.0	33.8	-292,794	0.0	-397,551	0.0	-397,551	0.0	-397,551	0.0	-397,551	0.0
10	38.2	34.7	-239,591	0.0	-383,065	0.0	-383,065	0.0	-383,065	0.0	-383,065	0.0
11	40.9	36.2	-183,962	0.0	-364,736	0.0	-364,736	0.0	-364,736	0.0	-364,736	0.0
12	43.9	37.4	-119,528	0.0	-324,475	0.0	-324,475	0.0	-324,475	0.0	-324,475	0.0
13	46.9	39.4	-53,100	0.0	-280,412	0.0	-280,412	0.0	-280,412	0.0	-280,412	0.0
14	49.7	41.4	0	0.0	-239,961	0.0	-239,961	0.0	-239,961	0.0	-239,961	0.0
15	51.8	42.8	0	0.0	-202,971	0.0	-202,971	0.0	-202,971	0.0	-202,971	0.0
16	53.2	43.9	0	0.0	-181,228	0.0	-181,228	0.0	-181,228	0.0	-181,228	0.0
17	53.7	44.2	0	0.0	-162,366	0.0	-162,366	0.0	-162,366	0.0	-162,366	0.0
18	53.4	44.4	0	0.0	-158,356	0.0	-158,356	0.0	-158,356	0.0	-158,356	0.0
19	52.7	44.4	0	0.0	-166,583	0.0	-166,583	0.0	-166,583	0.0	-166,583	0.0
20	51.5	45.2	0	0.0	-179,698	0.0	-179,698	0.0	-179,698	0.0	-179,698	0.0
21	50.0	44.6	0	0.0	-202,158	0.0	-202,158	0.0	-202,158	0.0	-202,158	0.0
22	48.1	43.3	0	0.0	-217,347	0.0	-217,347	0.0	-217,347	0.0	-217,347	0.0
23	46.1	41.8	-76,027	0.0	-238,711	0.0	-238,711	0.0	-238,711	0.0	-238,711	0.0
24	43.9	40.1	-170,653	0.0	-260,176	0.0	-260,176	0.0	-260,176	0.0	-260,176	0.0

		----- Design -----				----- Weekday -----				----- Saturday -----				----- Sunday -----				----- Monday -----				
Hour	OADB	DAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	51.3	46.8	-37,974		0.0		0		0.0		-134,487		0.0		-134,487		0.0		-134,487		0.0	
2	48.7	44.6	-73,329		0.0		0		0.0		-157,513		0.0		-157,513		0.0		-157,513		0.0	
3	46.6	42.9	-95,661		0.0		0		0.0		-185,559		0.0		-185,559		0.0		-185,559		0.0	
4	44.9	41.4	-125,203		0.0		-126,064		0.0		-204,925		0.0		-204,925		0.0		-204,925		0.0	
5	43.9	40.8	-141,997		0.0		-230,755		0.0		-230,755		0.0		-230,755		0.0		-230,755		0.0	
6	43.5	40.8	-164,920		0.0		-247,033		0.0		-247,033		0.0		-247,033		0.0		-247,033		0.0	
7	44.0	41.4	-174,832		0.0		-256,182		0.0		-256,182		0.0		-256,182		0.0		-256,182		0.0	
8	45.4	42.7	-154,428		0.0		-258,582		0.0		-258,582		0.0		-258,582		0.0		-258,582		0.0	
9	47.7	44.3	-121,439		0.0		-247,126		0.0		-247,126		0.0		-247,126		0.0		-247,126		0.0	
10	50.6	45.8	-70,040		0.0		-227,045		0.0		-227,045		0.0		-227,045		0.0		-227,045		0.0	
11	53.9	47.4	-13,542		0.0		-184,076		0.0		-184,076		0.0		-184,076		0.0		-184,076		0.0	
12	57.4	49.0	0		0.0		-141,080		0.0		-141,080		0.0		-141,080		0.0		-141,080		0.0	
13	60.7	50.8	0		0.0		-95,423		0.0		-95,423		0.0		-95,423		0.0		-95,423		0.0	
14	63.6	52.7	0		0.0		-46,432		0.0		-46,432		0.0		-46,432		0.0		-46,432		0.0	
15	65.9	53.7	0		0.0		-21,002		0.0		-21,002		0.0		-21,002		0.0		-21,002		0.0	
16	67.3	54.4	0	5.6			0		0.0		0		0.0		0		0.0		0		0.0	
17	67.8	54.6	0	18.3			0		0.0		0		0.0		0		0.0		0		0.0	
18	67.4	54.8	0	16.8			0		0.0		0		0.0		0		0.0		0		0.0	
19	66.4	55.2	0	13.4			0		0.0		0		0.0		0		0.0		0		0.0	
20	64.7	56.0	0	9.7			0		0.0		0		0.0		0		0.0		0		0.0	
21	62.5	56.0	0	6.2			0		0.0		0		0.0		0		0.0		0		0.0	
22	60.0	54.1	0	2.2			-19,993		0.0		-19,993		0.0		-19,993		0.0		-19,993		0.0	
23	57.1	51.9	0	0.0			-72,813		0.0		-72,813		0.0		-72,813		0.0		-72,813		0.0	
24	54.2	49.4	0	0.0			-100,284		0.0		-100,284		0.0		-100,284		0.0		-100,284		0.0	

April			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	
1	61.0	56.5	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
2	58.9	54.9	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
3	57.0	53.5	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
4	55.4	52.4	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
5	54.2	51.4	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
6	53.5	50.9	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
7	53.2	51.1	0	0.0		0.0	-6,734		0.0		0.0	-22,796		0.0	0.0	-22,796		0.0	0.0	-22,796		0.0	
8	53.9	51.5	0	0.0		0.0	-133,585		0.0		0.0	-133,585		0.0	0.0	-133,585		0.0	0.0	-133,585		0.0	
9	55.9	52.1	0	0.0		0.0	-127,214		0.0		0.0	-127,214		0.0	0.0	-127,214		0.0	0.0	-127,214		0.0	
10	58.9	53.2	0	0.0		0.0	-100,873		0.0		0.0	-100,873		0.0	0.0	-100,873		0.0	0.0	-100,873		0.0	
11	62.6	55.2	0	0.0		0.0	-63,516		0.0		0.0	-63,516		0.0	0.0	-63,516		0.0	0.0	-63,516		0.0	
12	66.5	57.3	0	0.0		0.0	-23,280		0.0		0.0	-23,280		0.0	0.0	-23,280		0.0	0.0	-23,280		0.0	
13	70.2	59.6	0	0.0		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
14	73.2	61.0	0	13.1		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
15	75.2	62.2	0	23.0		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
16	75.9	62.2	0	24.9		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
17	75.6	62.0	0	26.0		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
18	74.9	61.7	0	24.6		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
19	73.7	62.0	0	22.8		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
20	72.1	62.4	0	19.2		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
21	70.2	63.3	0	15.9		0.0	0	1.9		0.0		0	1.9		0.0	0	1.9		0.0	0	1.9		0.0
22	68.0	62.5	0	12.9		0.0	0	2.4		0.0		0	2.4		0.0	0	2.4		0.0	0	2.4		0.0
23	65.7	60.5	0	9.3		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0
24	63.4	58.5	0	6.8		0.0	0	0.0		0.0		0	0.0		0.0	0	0.0		0.0	0	0.0		0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
AHU'S

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		11.3		0		4.2		0		5.0		0		5.0		0		5.0
2	65.7	61.5		0		11.0		0		2.2		0		2.6		0		2.6		0		2.6
3	63.6	59.7		0		8.4		0		0.3		0		0.3		0		0.3		0		0.3
4	61.8	58.4		0		6.6		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1		0		4.4		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5		0		3.2		0		0.0		0		0.0		0		0.0		0		0.0
7	59.4	56.5		0		3.8		0		0.0		0		0.0		0		0.0		0		0.0
8	60.1	56.3		0		5.5		0		0.0		0		0.0		0		0.0		0		0.0
9	62.4	56.3		0		7.5		0		0.0		0		0.0		0		0.0		0		0.0
10	65.7	57.2		0		11.5		0		0.0		0		0.0		0		0.0		0		0.0
11	69.9	58.9		0		15.2		0		0.0		0		0.0		0		0.0		0		0.0
12	74.3	60.9		0		19.7		0		0.0		0		0.0		0		0.0		0		0.0
13	78.5	63.7		0		23.8		0		0.0		0		0.0		0		0.0		0		0.0
14	81.9	65.3		0		28.4		0		0.0		0		0.0		0		0.0		0		0.0
15	84.1	66.9		0		31.5		0		8.6		0		8.6		0		8.6		0		8.6
16	84.9	67.1		0		32.9		0		16.1		0		16.2		0		16.2		0		16.2
17	84.6	67.3		0		34.4		0		17.1		0		17.1		0		17.1		0		17.1
18	83.8	67.1		0		33.7		0		17.7		0		17.7		0		17.7		0		17.7
19	82.4	67.5		0		32.6		0		17.5		0		17.5		0		17.5		0		17.5
20	80.6	68.9		0		28.7		0		16.0		0		16.1		0		16.1		0		16.1
21	78.5	71.0		0		26.3		0		15.3		0		15.3		0		15.3		0		15.3
22	76.1	69.9		0		22.3		0		13.3		0		13.3		0		13.3		0		13.3
23	73.4	68.0		0		19.5		0		11.4		0		11.4		0		11.4		0		11.4
24	70.8	65.5		0		16.2		0		8.6		0		8.6		0		8.6		0		8.6

June Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh
1	74.7	70.1	0	26.9	0	14.3	0	16.1	0	16.1	0	16.1
2	72.6	68.4	0	23.8	0	12.5	0	13.3	0	13.3	0	13.3
3	70.9	67.3	0	20.7	0	9.6	0	9.9	0	9.9	0	9.9
4	69.6	66.5	0	18.8	0	7.7	0	7.8	0	7.8	0	7.8
5	68.7	65.8	0	17.3	0	5.8	0	5.9	0	5.9	0	5.9
6	68.5	65.7	0	15.2	0	3.3	0	3.3	0	3.3	0	3.3
7	69.0	66.3	0	17.1	0	3.1	0	3.1	0	3.1	0	3.1
8	70.6	66.9	0	18.5	0	4.2	0	4.2	0	4.2	0	4.2
9	73.0	67.7	0	21.7	0	5.6	0	5.6	0	5.6	0	5.6
10	76.1	68.1	0	24.9	0	9.4	0	9.4	0	9.4	0	9.4
11	79.5	69.1	0	28.4	0	13.1	0	13.1	0	13.1	0	13.1
12	82.9	70.1	0	32.8	0	16.8	0	16.8	0	16.8	0	16.8
13	86.0	71.0	0	36.7	0	21.1	0	21.1	0	21.1	0	21.1
14	88.4	72.5	0	40.2	0	24.8	0	24.8	0	24.8	0	24.8
15	90.0	74.0	0	43.3	0	29.2	0	29.2	0	29.2	0	29.2
16	90.5	73.7	0	44.8	0	29.8	0	29.8	0	29.8	0	29.8
17	90.3	74.2	0	46.6	0	30.8	0	30.8	0	30.8	0	30.8
18	89.4	73.9	0	45.4	0	31.4	0	31.4	0	31.4	0	31.4
19	88.1	74.5	0	44.2	0	31.2	0	31.2	0	31.2	0	31.2
20	86.4	75.3	0	40.4	0	28.4	0	28.4	0	28.4	0	28.4
21	84.3	76.5	0	38.4	0	27.0	0	27.0	0	27.0	0	27.0
22	81.9	75.7	0	35.7	0	24.6	0	24.6	0	24.6	0	24.6
23	79.5	74.0	0	32.0	0	22.1	0	22.1	0	22.1	0	22.1
24	77.0	72.1	0	29.5	0	19.1	0	19.1	0	19.1	0	19.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
AHU'S

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	26.7	0	11.1	0	12.4	0	12.4	0	12.4
2	72.4	69.4	0	22.9	0	9.7	0	10.2	0	10.2	0	10.2
3	71.3	68.4	0	20.8	0	7.7	0	8.0	0	8.0	0	8.0
4	70.5	67.7	0	19.1	0	5.9	0	6.0	0	6.0	0	6.0
5	70.0	67.4	0	17.6	0	4.1	0	4.2	0	4.2	0	4.2
6	69.9	67.5	0	16.4	0	2.5	0	2.5	0	2.5	0	2.5
7	70.3	68.0	0	17.2	0	2.0	0	2.1	0	2.1	0	2.1
8	71.7	69.0	0	19.3	0	3.6	0	3.6	0	3.6	0	3.6
9	73.7	69.5	0	21.3	0	5.4	0	5.4	0	5.4	0	5.4
10	76.2	70.6	0	24.3	0	9.7	0	9.7	0	9.7	0	9.7
11	78.9	71.8	0	27.5	0	13.7	0	13.8	0	13.8	0	13.8
12	81.4	73.0	0	32.4	0	17.6	0	17.6	0	17.6	0	17.6
13	83.4	74.4	0	35.7	0	22.1	0	22.1	0	22.1	0	22.1
14	84.8	74.8	0	39.2	0	24.7	0	24.7	0	24.7	0	24.7
15	85.2	75.0	0	42.3	0	27.1	0	27.1	0	27.1	0	27.1
16	85.1	75.0	0	43.8	0	29.3	0	29.3	0	29.3	0	29.3
17	84.6	74.7	0	44.7	0	28.4	0	28.4	0	28.4	0	28.4
18	83.8	74.6	0	44.5	0	29.0	0	29.0	0	29.0	0	29.0
19	82.7	74.6	0	42.5	0	27.8	0	27.8	0	27.8	0	27.8
20	81.4	74.4	0	39.6	0	25.8	0	25.8	0	25.8	0	25.8
21	79.9	74.9	0	36.5	0	24.0	0	24.0	0	24.0	0	24.0
22	78.4	74.0	0	33.6	0	21.2	0	21.2	0	21.2	0	21.2
23	76.8	72.7	0	31.0	0	19.0	0	19.0	0	19.0	0	19.0
24	75.2	71.6	0	28.5	0	16.3	0	16.3	0	16.3	0	16.3

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	27.7	0	13.9	0	15.5	0	15.5	0	15.5
2	73.2	70.3	0	22.3	0	12.1	0	12.7	0	12.7	0	12.7
3	71.7	68.9	0	20.3	0	9.0	0	9.3	0	9.3	0	9.3
4	70.4	67.8	0	18.6	0	7.1	0	7.2	0	7.2	0	7.2
5	69.5	66.8	0	16.8	0	5.2	0	5.2	0	5.2	0	5.2
6	68.9	66.4	0	15.5	0	3.5	0	3.6	0	3.6	0	3.6
7	68.7	66.4	0	15.4	0	2.2	0	2.2	0	2.2	0	2.2
8	69.2	66.8	0	16.7	0	1.9	0	1.9	0	1.9	0	1.9
9	70.8	67.7	0	20.3	0	3.4	0	3.4	0	3.4	0	3.4
10	73.2	67.7	0	23.2	0	6.2	0	6.3	0	6.3	0	6.3
11	76.2	68.8	0	28.0	0	10.5	0	10.5	0	10.5	0	10.5
12	79.3	70.3	0	31.8	0	15.6	0	15.6	0	15.6	0	15.6
13	82.3	72.2	0	36.6	0	19.5	0	19.5	0	19.5	0	19.5
14	84.7	73.7	0	41.9	0	24.0	0	24.0	0	24.0	0	24.0
15	86.3	74.6	0	44.8	0	27.9	0	27.9	0	27.9	0	27.9
16	86.8	75.1	0	46.2	0	29.3	0	29.3	0	29.3	0	29.3
17	86.6	75.1	0	46.8	0	31.0	0	31.0	0	31.0	0	31.0
18	86.0	75.3	0	45.0	0	31.9	0	31.9	0	31.9	0	31.9
19	85.1	76.0	0	42.7	0	30.0	0	30.0	0	30.0	0	30.0
20	83.8	76.8	0	40.1	0	28.1	0	28.1	0	28.1	0	28.1
21	82.3	77.2	0	37.4	0	26.6	0	26.6	0	26.6	0	26.6
22	80.6	76.3	0	34.3	0	24.2	0	24.2	0	24.2	0	24.2
23	78.7	75.3	0	30.5	0	21.2	0	21.2	0	21.2	0	21.2
24	76.8	73.7	0	28.1	0	18.3	0	18.3	0	18.3	0	18.3

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
AHU'S

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	20.3	0	6.6	0	7.9	0	7.9	0	7.9
2	67.6	65.0	0	15.6	0	3.8	0	4.3	0	4.3	0	4.3
3	65.8	63.4	0	12.0	0	1.7	0	1.8	0	1.8	0	1.8
4	64.3	62.2	0	9.9	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	6.1	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	7.2	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	10.2	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	14.9	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	20.4	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	25.2	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	29.9	0	1.8	0	1.9	0	1.9	0	1.9
14	81.2	68.4	0	35.2	0	17.8	0	18.0	0	18.0	0	18.0
15	83.0	70.0	0	38.6	0	20.2	0	20.3	0	20.3	0	20.3
16	83.7	70.5	0	40.5	0	22.4	0	22.4	0	22.4	0	22.4
17	83.4	70.5	0	40.5	0	23.8	0	23.8	0	23.8	0	23.8
18	82.8	70.9	0	38.5	0	23.6	0	23.6	0	23.6	0	23.6
19	81.6	72.7	0	35.8	0	21.9	0	21.9	0	21.9	0	21.9
20	80.1	74.7	0	33.2	0	20.8	0	20.8	0	20.8	0	20.8
21	78.3	74.1	0	30.5	0	19.5	0	19.5	0	19.5	0	19.5
22	76.3	72.4	0	26.3	0	16.7	0	16.7	0	16.7	0	16.7
23	74.1	70.7	0	22.8	0	13.5	0	13.5	0	13.5	0	13.5
24	71.8	68.9	0	19.2	0	10.7	0	10.7	0	10.7	0	10.7

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	50.1	48.6	0	0.0	0	0.0	-33,553	0.0	-33,553	0.0	-33,553	0.0
3	48.4	46.9	0	0.0	0	0.0	-143,082	0.0	-143,082	0.0	-143,082	0.0
4	47.1	45.8	0	0.0	0	0.0	-163,119	0.0	-163,119	0.0	-163,119	0.0
5	46.3	44.8	0	0.0	-128,108	0.0	-189,436	0.0	-189,436	0.0	-189,436	0.0
6	46.0	44.5	0	0.0	-209,416	0.0	-209,416	0.0	-209,416	0.0	-209,416	0.0
7	46.8	45.3	-59,009	0.0	-217,939	0.0	-217,939	0.0	-217,939	0.0	-217,939	0.0
8	48.9	47.5	-108,594	0.0	-216,206	0.0	-216,206	0.0	-216,206	0.0	-216,206	0.0
9	52.2	49.9	-67,561	0.0	-195,253	0.0	-195,253	0.0	-195,253	0.0	-195,253	0.0
10	56.2	52.5	-10,827	0.0	-169,137	0.0	-169,137	0.0	-169,137	0.0	-169,137	0.0
11	60.4	54.4	0	0.0	-114,847	0.0	-114,847	0.0	-114,847	0.0	-114,847	0.0
12	64.4	56.0	0	0.0	-57,300	0.0	-57,300	0.0	-57,300	0.0	-57,300	0.0
13	67.7	57.3	0	0.0	-11,623	0.0	-11,623	0.0	-11,623	0.0	-11,623	0.0
14	69.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	11.7	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	22.7	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	22.7	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	19.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	15.9	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	12.2	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	8.8	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
AHU'S

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	0	0.0	0	0.0	-108,642	0.0	-108,642	0.0	-108,642	0.0
2	49.4	47.3	0	0.0	0	0.0	-140,204	0.0	-140,204	0.0	-140,204	0.0
3	47.2	45.3	-52,138	0.0	0	0.0	-161,291	0.0	-161,291	0.0	-161,291	0.0
4	45.3	43.4	-134,460	0.0	-70,471	0.0	-190,058	0.0	-190,058	0.0	-190,058	0.0
5	43.9	42.2	-150,443	0.0	-207,460	0.0	-207,460	0.0	-207,460	0.0	-207,460	0.0
6	43.0	41.4	-172,992	0.0	-232,997	0.0	-232,997	0.0	-232,997	0.0	-232,997	0.0
7	42.7	41.2	-181,195	0.0	-246,911	0.0	-246,911	0.0	-246,911	0.0	-246,911	0.0
8	43.5	42.0	-166,447	0.0	-255,279	0.0	-255,279	0.0	-255,279	0.0	-255,279	0.0
9	45.9	44.0	-119,787	0.0	-242,652	0.0	-242,652	0.0	-242,652	0.0	-242,652	0.0
10	49.4	46.6	-58,623	0.0	-218,150	0.0	-218,150	0.0	-218,150	0.0	-218,150	0.0
11	53.8	48.6	0	0.0	-181,527	0.0	-181,527	0.0	-181,527	0.0	-181,527	0.0
12	58.4	50.6	0	0.0	-133,217	0.0	-133,217	0.0	-133,217	0.0	-133,217	0.0
13	62.8	52.6	0	0.0	-77,953	0.0	-77,953	0.0	-77,953	0.0	-77,953	0.0
14	66.3	54.5	0	0.0	-31,834	0.0	-31,834	0.0	-31,834	0.0	-31,834	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	19.7	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	19.7	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	16.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	13.3	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	8.8	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	5.4	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5	54.0	0	0.0	-6,740	0.0	-6,740	0.0	-6,740	0.0	-6,740	0.0
24	54.7	51.7	0	0.0	-88,490	0.0	-88,490	0.0	-88,490	0.0	-88,490	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-124,316	0.0	0	0.0	-210,973	0.0	-210,973	0.0	-210,973	0.0
2	43.2	41.1	-155,045	0.0	-124,882	0.0	-241,489	0.0	-241,489	0.0	-241,489	0.0
3	41.8	39.8	-185,407	0.0	-257,399	0.0	-257,399	0.0	-257,399	0.0	-257,399	0.0
4	40.7	38.7	-203,294	0.0	-282,679	0.0	-282,679	0.0	-282,679	0.0	-282,679	0.0
5	40.1	38.4	-219,322	0.0	-297,289	0.0	-297,289	0.0	-297,289	0.0	-297,289	0.0
6	39.9	38.4	-231,412	0.0	-311,179	0.0	-311,179	0.0	-311,179	0.0	-311,179	0.0
7	40.5	39.0	-239,629	0.0	-325,489	0.0	-325,489	0.0	-325,489	0.0	-325,489	0.0
8	42.2	40.7	-244,993	0.0	-332,718	0.0	-332,718	0.0	-332,718	0.0	-332,718	0.0
9	44.9	43.4	-206,361	0.0	-310,526	0.0	-310,526	0.0	-310,526	0.0	-310,526	0.0
10	48.2	45.8	-157,604	0.0	-285,755	0.0	-285,755	0.0	-285,755	0.0	-285,755	0.0
11	51.7	48.3	-87,983	0.0	-247,170	0.0	-247,170	0.0	-247,170	0.0	-247,170	0.0
12	55.0	50.7	-23,310	0.0	-198,141	0.0	-198,141	0.0	-198,141	0.0	-198,141	0.0
13	57.7	52.0	0	0.0	-147,110	0.0	-147,110	0.0	-147,110	0.0	-147,110	0.0
14	59.5	52.6	0	0.0	-106,944	0.0	-106,944	0.0	-106,944	0.0	-106,944	0.0
15	60.1	52.7	0	0.0	-81,025	0.0	-81,025	0.0	-81,025	0.0	-81,025	0.0
16	59.9	52.6	0	0.0	-53,938	0.0	-53,938	0.0	-53,938	0.0	-53,938	0.0
17	59.2	52.1	0	0.0	-46,325	0.0	-46,325	0.0	-46,325	0.0	-46,325	0.0
18	58.2	51.8	0	0.0	-56,720	0.0	-56,720	0.0	-56,720	0.0	-56,720	0.0
19	56.8	52.2	0	1.9	-71,676	0.0	-71,676	0.0	-71,676	0.0	-71,676	0.0
20	55.0	51.4	0	0.7	-97,186	0.0	-97,186	0.0	-97,186	0.0	-97,186	0.0
21	53.1	50.1	0	0.0	-110,380	0.0	-110,380	0.0	-110,380	0.0	-110,380	0.0
22	51.0	48.1	0	0.0	-145,110	0.0	-145,110	0.0	-145,110	0.0	-145,110	0.0
23	48.9	46.2	0	0.0	-168,292	0.0	-168,292	0.0	-168,292	0.0	-168,292	0.0
24	46.9	44.1	0	0.0	-188,513	0.0	-188,513	0.0	-188,513	0.0	-188,513	0.0

01 Card - Job Information

Project: NELSON HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29801

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	YES

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	TV STUDIO

-----CARD 20-- General Room Parameters-----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	1885	10	3	0		13.6	2		

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Design DB	Driftpoint	Schedule	Flag	Average	Floor
1	50					CLGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Reflectance Multiplier
1	1	344.5	14		196	0			
1	2	57.5	14		196	90			
1	3	366.5	14		196	180			
1	4	57.5	14		196	270			

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of	U-Value	Coefficient	Shading	Shading	Solar to	Transmittance	Visible
				Windows			Type	Type	Ret. Air		Reflectance
1	1	2.5	10.5	17	1.03	.82					
1	2	2.5	10.5	4	1.03	.82					
1	3	2.5	10.5	21	1.03	.82					
1	4	2.5	10.5	4	1.03	.82					

-----CARD 26-- Schedules -----

Room	People	Lights	Ventilation	Infiltration	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	FGHEAT	FGHEAT	YES	YES	Minimum	Fans	Fan	Fan	Exhaust	Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Percent	--- Daylighting ---
Number	Value	Units	Sensible	Latent	Value	Units	Type	Lights to	Reference
							Factor	Ret. Air	Point 1
1	54	PEOPLE	255	325	2.3	WATT-SF	SUSFLUOR		Point 2

Room Number	Misc Equipment	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	22700	BTUH	FGHEAT						

Room Number	Ventilation				Infiltration				Reheat Minimum	
	Cooling		Heating		Cooling		Heating		Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

Room		Main				Auxiliary				Room Exhaust			
Number	Value	Cooling		Heating		Value	Units	Cooling		Heating		Value	Units
		Units		Value	Units			Value	Units	Value	Units		
1	1	CFM-SF		1	CFM-SF								

Number	Description
1	AHU'S

System		Ventil	Fan				
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBVh	SADBVh	Schedule	Schedule	Pressure
1	SZ						

[illegible]

-----CARD 42--- Fan SP and Duct Parameters-----

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHO FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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*****  
*****  
**                                     **  
**          T R A C E    6 0 0    A N A L Y S I S          **  
**                                     **  
**          by              **  
**                                     **  
*****  
*****
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OLMSTEAD HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29805 (1 BLDG)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 8:19:56 8/16/94
Dataset Name: FGTPS17 .TM

System 1 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==> Mo/Hr: 8/16 * Mo/Hr: 6/19 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 96/ 76/105.0 * OADB: 93 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	84,509	0		84,509	13.95	*	108,588	48.87	*	-69,906	-69,906	11.33
Glass Solar	25,800	0		25,800	4.26	*	27,600	12.42	*	0	0	0.00
Glass Cond	10,296	0		10,296	1.70	*	9,821	4.42	*	-25,661	-25,661	4.16
Wall Cond	62,805	0		62,805	10.37	*	76,194	34.29	*	-109,544	-109,544	17.75
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	0			0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	183,410	0		183,410	30.27	*	222,202	100.00	*	-205,111	-205,111	33.24
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	422,449	69.73	*	0	0.00	*	0	-411,876	66.76
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat PkUp		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
Grand Total==>	183,410	0	0	605,860	100.00	*	222,202	100.00	*	-205,111	-616,986	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Floor	22,100	
Main Clg	50.5	605.9	376.5	22,100	82.9	68.1	80.0	65.9	59.9	67.9	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	22,100
Totals	50.5	605.9									Wall	7,680

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	37.3	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	8,250	8,250	Clg Cfm/Sqft	1.00	SAOB	65.9	76.4
Main Htg	-617.0	22,100	51.2	76.4	Infil	0	0	Clg Cfm/Ton	437.73	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	22,100	22,100	Clg Sqft/Ton	437.73	Return	75.0	68.0
Preheat	-361.3	22,100	51.2	65.9	Mincfm	0	0	Clg Btuh/Sqft	27.41	Ret/OA	82.9	51.2
Reheat	0.0	0	0.0	0.0	Return	22,100	22,100	No. People	1,100	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	8,250	8,250	Htg % OA	37.3	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-617.0				Auxil	0	0	Htg Btuh/SqFt	-27.92	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-406,593	0.0	-451,075	0.0	-451,075	0.0	-451,075	0.0	-451,075	0.0
2	32.9	30.7	-400,715	0.0	-464,996	0.0	-464,996	0.0	-464,996	0.0	-464,996	0.0
3	33.1	31.3	-397,322	0.0	-463,726	0.0	-463,726	0.0	-463,726	0.0	-463,726	0.0
4	33.9	32.1	-394,401	0.0	-457,748	0.0	-457,748	0.0	-457,748	0.0	-457,748	0.0
5	35.2	33.5	-391,302	0.0	-447,740	0.0	-447,740	0.0	-447,740	0.0	-447,740	0.0
6	37.0	35.4	-382,941	0.0	-433,433	0.0	-433,433	0.0	-433,433	0.0	-433,433	0.0
7	39.0	37.6	-370,495	0.0	-417,282	0.0	-417,282	0.0	-417,282	0.0	-417,282	0.0
8	41.3	40.1	-351,773	0.0	-398,285	0.0	-398,285	0.0	-398,285	0.0	-398,285	0.0
9	43.7	42.5	-325,077	0.0	-378,094	0.0	-378,094	0.0	-378,094	0.0	-378,094	0.0
10	46.1	44.0	-292,190	0.0	-357,073	0.0	-357,073	0.0	-357,073	0.0	-357,073	0.0
11	48.4	45.0	-238,292	0.0	-336,006	0.0	-336,006	0.0	-336,006	0.0	-336,006	0.0
12	50.5	45.6	-191,780	0.0	-315,845	0.0	-315,845	0.0	-315,845	0.0	-315,845	0.0
13	52.2	46.1	-154,728	0.0	-298,359	0.0	-298,359	0.0	-298,359	0.0	-298,359	0.0
14	53.5	46.4	-119,164	0.0	-283,463	0.0	-283,463	0.0	-283,463	0.0	-283,463	0.0
15	54.3	46.3	-91,036	0.0	-272,150	0.0	-272,150	0.0	-272,150	0.0	-272,150	0.0
16	54.6	46.1	-73,313	0.0	-225,630	0.0	-225,630	0.0	-225,630	0.0	-225,630	0.0
17	54.0	45.9	-71,650	0.0	-212,667	0.0	-212,667	0.0	-212,667	0.0	-212,667	0.0
18	52.5	45.0	-92,968	0.0	-222,668	0.0	-222,668	0.0	-222,668	0.0	-222,668	0.0
19	50.1	44.8	-123,803	0.0	-246,657	0.0	-246,657	0.0	-246,657	0.0	-246,657	0.0
20	47.1	43.3	-156,514	0.0	-278,521	0.0	-278,521	0.0	-278,521	0.0	-278,521	0.0
21	43.7	40.4	-192,405	0.0	-318,214	0.0	-318,214	0.0	-318,214	0.0	-318,214	0.0
22	40.4	37.3	-223,102	0.0	-359,738	0.0	-359,738	0.0	-359,738	0.0	-359,738	0.0
23	37.3	34.9	-251,904	0.0	-396,318	0.0	-396,318	0.0	-396,318	0.0	-396,318	0.0
24	34.9	32.6	-276,833	0.0	-429,340	0.0	-429,340	0.0	-429,340	0.0	-429,340	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-279,472	0.0	-360,566	0.0	-360,566	0.0	-360,566	0.0	-360,566	0.0
2	39.7	37.1	-298,636	0.0	-388,371	0.0	-388,371	0.0	-388,371	0.0	-388,371	0.0
3	37.8	35.1	-317,225	0.0	-413,765	0.0	-413,765	0.0	-413,765	0.0	-413,765	0.0
4	36.3	33.8	-330,897	0.0	-433,796	0.0	-433,796	0.0	-433,796	0.0	-433,796	0.0
5	35.1	32.6	-342,215	0.0	-445,114	0.0	-445,114	0.0	-445,114	0.0	-445,114	0.0
6	34.4	32.0	-346,549	0.0	-452,601	0.0	-452,601	0.0	-452,601	0.0	-452,601	0.0
7	34.1	31.9	-343,770	0.0	-457,105	0.0	-457,105	0.0	-457,105	0.0	-457,105	0.0
8	34.6	32.4	-330,003	0.0	-454,529	0.0	-454,529	0.0	-454,529	0.0	-454,529	0.0
9	36.0	33.8	-300,776	0.0	-443,570	0.0	-443,570	0.0	-443,570	0.0	-443,570	0.0
10	38.2	34.7	-267,986	0.0	-424,826	0.0	-424,826	0.0	-424,826	0.0	-424,826	0.0
11	40.9	36.2	-226,516	0.0	-400,759	0.0	-400,759	0.0	-400,759	0.0	-400,759	0.0
12	43.9	37.4	-183,859	0.0	-373,145	0.0	-373,145	0.0	-373,145	0.0	-373,145	0.0
13	46.9	39.4	-147,581	0.0	-344,625	0.0	-344,625	0.0	-344,625	0.0	-344,625	0.0
14	49.7	41.4	-112,626	0.0	-317,021	0.0	-317,021	0.0	-317,021	0.0	-317,021	0.0
15	51.8	42.8	-85,813	0.0	-294,780	0.0	-294,780	0.0	-294,780	0.0	-294,780	0.0
16	53.2	43.9	-67,698	0.0	-245,784	0.0	-245,784	0.0	-245,784	0.0	-245,784	0.0
17	53.7	44.2	-61,482	0.0	-221,388	0.0	-221,388	0.0	-221,388	0.0	-221,388	0.0
18	53.4	44.4	-76,947	0.0	-216,805	0.0	-216,805	0.0	-216,805	0.0	-216,805	0.0
19	52.7	44.4	-103,432	0.0	-223,945	0.0	-223,945	0.0	-223,945	0.0	-223,945	0.0
20	51.5	45.2	-138,595	0.0	-238,575	0.0	-238,575	0.0	-238,575	0.0	-238,575	0.0
21	50.0	44.6	-171,193	0.0	-256,893	0.0	-256,893	0.0	-256,893	0.0	-256,893	0.0
22	48.1	43.3	-202,229	0.0	-283,027	0.0	-283,027	0.0	-283,027	0.0	-283,027	0.0
23	46.1	41.8	-232,138	0.0	-305,321	0.0	-305,321	0.0	-305,321	0.0	-305,321	0.0
24	43.9	40.1	-257,160	0.0	-333,788	0.0	-333,788	0.0	-333,788	0.0	-333,788	0.0

March	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton				
1	51.3	46.8	-124,901	0.0	-135,370	0.0	-213,382	0.0	-213,382	0.0	-213,382	0.0	-213,382	0.0						
2	48.7	44.6	-150,558	0.0	-248,318	0.0	-248,318	0.0	-248,318	0.0	-248,318	0.0	-248,318	0.0						
3	46.6	42.9	-171,737	0.0	-275,613	0.0	-275,613	0.0	-275,613	0.0	-275,613	0.0	-275,613	0.0						
4	44.9	41.4	-187,337	0.0	-302,127	0.0	-302,127	0.0	-302,127	0.0	-302,127	0.0	-302,127	0.0						
5	43.9	40.8	-200,289	0.0	-319,204	0.0	-319,204	0.0	-319,204	0.0	-319,204	0.0	-319,204	0.0						
6	43.5	40.8	-203,775	0.0	-333,698	0.0	-333,698	0.0	-333,698	0.0	-333,698	0.0	-333,698	0.0						
7	44.0	41.4	-203,736	0.0	-335,393	0.0	-335,393	0.0	-335,393	0.0	-335,393	0.0	-335,393	0.0						
8	45.4	42.7	-177,926	0.0	-324,294	0.0	-324,294	0.0	-324,294	0.0	-324,294	0.0	-324,294	0.0						
9	47.7	44.3	-146,916	0.0	-305,010	0.0	-305,010	0.0	-305,010	0.0	-305,010	0.0	-305,010	0.0						
10	50.6	45.8	-104,108	0.0	-272,844	0.0	-272,844	0.0	-272,844	0.0	-272,844	0.0	-272,844	0.0						
11	53.9	47.4	-53,008	0.0	-235,441	0.0	-235,441	0.0	-235,441	0.0	-235,441	0.0	-235,441	0.0						
12	57.4	49.0	-3,653	0.0	-190,314	0.0	-190,314	0.0	-190,314	0.0	-190,314	0.0	-190,314	0.0						
13	60.7	50.8	0	0.0	-148,152	0.0	-148,152	0.0	-148,152	0.0	-148,152	0.0	-148,152	0.0						
14	63.6	52.7	0	0.0	-107,322	0.0	-107,322	0.0	-107,322	0.0	-107,322	0.0	-107,322	0.0						
15	65.9	53.7	0	0.0	-70,660	0.0	-70,660	0.0	-70,660	0.0	-70,660	0.0	-70,660	0.0						
16	67.3	54.4	0	0.0	-42,829	0.0	-42,829	0.0	-42,829	0.0	-42,829	0.0	-42,829	0.0						
17	67.8	54.6	0	1.1	-24,990	0.0	-24,990	0.0	-24,990	0.0	-24,990	0.0	-24,990	0.0						
18	67.4	54.8	0	6.5	-21,345	0.0	-21,345	0.0	-21,345	0.0	-21,345	0.0	-21,345	0.0						
19	66.4	55.2	0	3.4	-30,262	0.0	-30,262	0.0	-30,262	0.0	-30,262	0.0	-30,262	0.0						
20	64.7	56.0	0	0.0	-48,414	0.0	-48,414	0.0	-48,414	0.0	-48,414	0.0	-48,414	0.0						
21	62.5	56.0	0	0.0	-76,361	0.0	-76,361	0.0	-76,361	0.0	-76,361	0.0	-76,361	0.0						
22	60.0	54.1	0	0.0	-106,778	0.0	-106,778	0.0	-106,778	0.0	-106,778	0.0	-106,778	0.0						
23	57.1	51.9	0	0.0	-141,985	0.0	-141,985	0.0	-141,985	0.0	-141,985	0.0	-141,985	0.0						
24	54.2	49.4	0	0.0	-176,987	0.0	-176,987	0.0	-176,987	0.0	-176,987	0.0	-176,987	0.0						

April			----- Design -----				----- Weekday -----			----- Saturday-----				----- Sunday -----				----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	61.0	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
2	58.9	54.9		-12,462		0.0		0		0.0		0		0.0		0		0.0		0		0.0
3	57.0	53.5		-37,132		0.0		-9,083		0.0		-132,081		0.0		-132,081		0.0		-132,081		0.0
4	55.4	52.4		-55,512		0.0		-163,266		0.0		-163,266		0.0		-163,266		0.0		-163,266		0.0
5	54.2	51.4		-68,049		0.0		-182,276		0.0		-182,276		0.0		-182,276		0.0		-182,276		0.0
6	53.5	50.9		-74,559		0.0		-199,598		0.0		-199,598		0.0		-199,598		0.0		-199,598		0.0
7	53.2	51.1		-67,241		0.0		-206,813		0.0		-206,813		0.0		-206,813		0.0		-206,813		0.0
8	53.9	51.5		-43,406		0.0		-204,212		0.0		-204,212		0.0		-204,212		0.0		-204,212		0.0
9	55.9	52.1		-10,859		0.0		-184,501		0.0		-184,501		0.0		-184,501		0.0		-184,501		0.0
10	58.9	53.2		0		0.0		-149,191		0.0		-149,191		0.0		-149,191		0.0		-149,191		0.0
11	62.6	55.2		0		0.0		-106,243		0.0		-106,243		0.0		-106,243		0.0		-106,243		0.0
12	66.5	57.3		0		0.0		-59,266		0.0		-59,266		0.0		-59,266		0.0		-59,266		0.0
13	70.2	59.6		0		0.0		-11,688		0.0		-11,688		0.0		-11,688		0.0		-11,688		0.0
14	73.2	61.0		0	10.2			0		0.0		0		0.0		0		0.0		0		0.0
15	75.2	62.2		0	16.5			0		0.0		0		0.0		0		0.0		0		0.0
16	75.9	62.2		0	17.7			0		0.0		0		0.0		0		0.0		0		0.0
17	75.6	62.0		0	18.0			0		0.0		0		0.0		0		0.0		0		0.0
18	74.9	61.7		0	16.8			0		0.0		0		0.0		0		0.0		0		0.0
19	73.7	62.0		0	14.0			0		0.0		0		0.0		0		0.0		0		0.0
20	72.1	62.4		0	10.8			0		0.0		0		0.0		0		0.0		0		0.0
21	70.2	63.3		0	7.6			0		0.0		0		0.0		0		0.0		0		0.0
22	68.0	62.5		0	4.6			0		0.0		0		0.0		0		0.0		0		0.0
23	65.7	60.5		0	1.6			0		0.0		0		0.0		0		0.0		0		0.0
24	63.4	58.5		0	0.0			0		0.0		0		0.0		0		0.0		0		0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OA WB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
2	65.7	61.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
3	63.6	59.7		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
4	61.8	58.4		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5		0		0.0		-44,429		0.0		-44,429		0.0		-44,429		0.0		-44,429		0.0
7	59.4	56.5		0		0.0		-116,447		0.0		-116,447		0.0		-116,447		0.0		-116,447		0.0
8	60.1	56.3		0		0.0		-111,884		0.0		-111,884		0.0		-111,884		0.0		-111,884		0.0
9	62.4	56.3		0		1.4		-88,750		0.0		-88,750		0.0		-88,750		0.0		-88,750		0.0
10	65.7	57.2		0		8.1		-48,236		0.0		-48,236		0.0		-48,236		0.0		-48,236		0.0
11	69.9	58.9		0		12.4		-3,982		0.0		-3,982		0.0		-3,982		0.0		-3,982		0.0
12	74.3	60.9		0		16.9		0		0.0		0		0.0		0		0.0		0		0.0
13	78.5	63.7		0		20.7		0		0.0		0		0.0		0		0.0		0		0.0
14	81.9	65.3		0		24.1		0		0.0		0		0.0		0		0.0		0		0.0
15	84.1	66.9		0		26.6		0		1.6		0		1.6		0		1.6		0		1.6
16	84.9	67.1		0		27.8		0		14.0		0		14.0		0		14.0		0		14.0
17	84.6	67.3		0		27.9		0		14.8		0		14.8		0		14.8		0		14.8
18	83.8	67.1		0		26.6		0		15.0		0		15.0		0		15.0		0		15.0
19	82.4	67.5		0		24.0		0		14.4		0		14.4		0		14.4		0		14.4
20	80.6	68.9		0		20.4		0		14.3		0		14.3		0		14.3		0		14.3
21	78.5	71.0		0		17.1		0		14.8		0		14.8		0		14.8		0		14.8
22	76.1	69.9		0		13.6		0		11.3		0		11.3		0		11.3		0		11.3
23	73.4	68.0		0		10.4		0		6.2		0		6.2		0		6.2		0		6.2
24	70.8	65.5		0		7.7		0		1.8		0		1.8		0		1.8		0		1.8

June	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OA WB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0	17.9		0	9.9		0	11.4		0	11.4		0	11.4		0	11.4		11.4
2	72.6	68.4		0	15.3		0	5.9		0	6.0		0	6.0		0	6.0		0	6.0		6.0
3	70.9	67.3		0	13.1		0	2.3		0	2.4		0	2.4		0	2.4		0	2.4		2.4
4	69.6	66.5		0	11.6		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0.0
5	68.7	65.8		0	10.2		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0.0
6	68.5	65.7		0	9.8		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0.0
7	69.0	66.3		0	11.4		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0.0
8	70.6	66.9		0	14.1		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0.0
9	73.0	67.7		0	17.1		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0.0
10	76.1	68.1		0	20.9		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0.0
11	79.5	69.1		0	25.0		0	5.6		0	5.6		0	5.6		0	5.6		0	5.6		5.6
12	82.9	70.1		0	29.3		0	13.9		0	13.9		0	13.9		0	13.9		0	13.9		13.9
13	86.0	71.0		0	33.1		0	17.9		0	17.9		0	17.9		0	17.9		0	17.9		17.9
14	88.4	72.5		0	36.2		0	22.4		0	22.4		0	22.4		0	22.4		0	22.4		22.4
15	90.0	74.0		0	38.8		0	27.4		0	27.4		0	27.4		0	27.4		0	27.4		27.4
16	90.5	73.7		0	39.9		0	28.1		0	28.1		0	28.1		0	28.1		0	28.1		28.1
17	90.3	74.2		0	40.4		0	30.3		0	30.3		0	30.3		0	30.3		0	30.3		30.3
18	89.4	73.9		0	37.5		0	30.6		0	30.6		0	30.6		0	30.6		0	30.6		30.6
19	88.1	74.5		0	34.9		0	29.8		0	29.8		0	29.8		0	29.8		0	29.8		29.8
20	86.4	75.3		0	31.8		0	30.2		0	30.2		0	30.2		0	30.2		0	30.2		30.2
21	84.3	76.5		0	30.0		0	32.2		0	32.2		0	32.2		0	32.2		0	32.2		32.2
22	81.9	75.7		0	27.1		0	29.0		0	29.0		0	29.0		0	29.0		0	29.0		29.0
23	79.5	74.0		0	24.2		0	23.1		0	23.1		0	23.1		0	23.1		0	23.1		23.1
24	77.0	72.1		0	21.3		0	17.0		0	17.0		0	17.0		0	17.0		0	17.0		17.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

July	----- Design -----				----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5		0		20.1		0		7.0		0		8.1		0		8.1
2	72.4	69.4		0		16.6		0		4.7		0		4.8		0		4.8
3	71.3	68.4		0		14.9		0		1.3		0		1.3		0		1.3
4	70.5	67.7		0		13.2		0		0.0		0		0.0		0		0.0
5	70.0	67.4		0		12.2		0		0.0		0		0.0		0		0.0
6	69.9	67.5		0		11.6		0		0.0		0		0.0		0		0.0
7	70.3	68.0		0		13.2		0		0.0		0		0.0		0		0.0
8	71.7	69.0		0		15.2		0		0.0		0		0.0		0		0.0
9	73.7	69.5		0		17.7		0		0.0		0		0.0		0		0.0
10	76.2	70.6		0		20.8		0		0.0		0		0.0		0		0.0
11	78.9	71.8		0		24.2		0		7.5		0		7.5		0		7.5
12	81.4	73.0		0		29.6		0		17.3		0		17.3		0		17.3
13	83.4	74.4		0		33.2		0		21.1		0		21.1		0		21.1
14	84.8	74.8		0		35.8		0		23.9		0		23.9		0		23.9
15	85.2	75.0		0		38.4		0		26.0		0		26.0		0		26.0
16	85.1	75.0		0		39.8		0		27.2		0		27.2		0		27.2
17	84.6	74.7		0		40.6		0		27.6		0		27.6		0		27.6
18	83.8	74.6		0		37.7		0		27.7		0		27.7		0		27.7
19	82.7	74.6		0		35.8		0		28.8		0		28.8		0		28.8
20	81.4	74.4		0		33.0		0		27.0		0		27.0		0		27.0
21	79.9	74.9		0		30.5		0		26.3		0		26.3		0		26.3
22	78.4	74.0		0		27.6		0		21.8		0		21.8		0		21.8
23	76.8	72.7		0		24.7		0		16.3		0		16.3		0		16.3
24	75.2	71.6		0		22.4		0		12.7		0		12.7		0		12.7

August			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0		20.2		0		10.2		0		11.7		0		11.7		0		11.7
2	73.2	70.3		0		16.2		0		6.4		0		6.6		0		6.6		0		6.6
3	71.7	68.9		0		13.8		0		2.6		0		2.7		0		2.7		0		2.7
4	70.4	67.8		0		12.0		0		0.0		0		0.0		0		0.0		0		0.0
5	69.5	66.8		0		10.1		0		0.0		0		0.0		0		0.0		0		0.0
6	68.9	66.4		0		10.1		0		0.0		0		0.0		0		0.0		0		0.0
7	68.7	66.4		0		10.8		0		0.0		0		0.0		0		0.0		0		0.0
8	69.2	66.8		0		13.4		0		0.0		0		0.0		0		0.0		0		0.0
9	70.8	67.7		0		16.5		0		0.0		0		0.0		0		0.0		0		0.0
10	73.2	67.7		0		20.2		0		0.0		0		0.0		0		0.0		0		0.0
11	76.2	68.8		0		23.8		0		0.0		0		0.0		0		0.0		0		0.0
12	79.3	70.3		0		27.9		0		3.1		0		3.1		0		3.1		0		3.1
13	82.3	72.2		0		32.8		0		17.2		0		17.2		0		17.2		0		17.2
14	84.7	73.7		0		36.7		0		21.2		0		21.2		0		21.2		0		21.2
15	86.3	74.6		0		39.1		0		26.2		0		26.2		0		26.2		0		26.2
16	86.8	75.1		0		40.8		0		28.8		0		28.8		0		28.8		0		28.8
17	86.6	75.1		0		39.4		0		29.8		0		29.8		0		29.8		0		29.8
18	86.0	75.3		0		38.2		0		32.1		0		32.1		0		32.1		0		32.1
19	85.1	76.0		0		35.8		0		31.6		0		31.6		0		31.6		0		31.6
20	83.8	76.8		0		32.9		0		31.6		0		31.6		0		31.6		0		31.6
21	82.3	77.2		0		31.5		0		31.5		0		31.5		0		31.5		0		31.5
22	80.6	76.3		0		27.0		0		28.2		0		28.2		0		28.2		0		28.2
23	78.7	75.3		0		24.1		0		22.5		0		22.5		0		22.5		0		22.5
24	76.8	73.7		0		21.4		0		17.0		0		17.0		0		17.0		0		17.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	9.0	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	5.5	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	3.3	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	1.0	-47,833	0.0	-47,833	0.0	-47,833	0.0	-47,833	0.0
8	62.9	60.9	0	2.8	-83,943	0.0	-83,943	0.0	-83,943	0.0	-83,943	0.0
9	64.7	61.8	0	5.9	-67,997	0.0	-67,997	0.0	-67,997	0.0	-67,997	0.0
10	67.6	62.1	0	9.4	-38,151	0.0	-38,151	0.0	-38,151	0.0	-38,151	0.0
11	71.1	63.1	0	13.0	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	16.6	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	21.3	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	24.9	0	0.0	0	0.0	0	0.0	0	0.0
15	83.0	70.0	0	27.8	0	0.0	0	0.0	0	0.0	0	0.0
16	83.7	70.5	0	29.1	0	16.0	0	16.0	0	16.0	0	16.0
17	83.4	70.5	0	27.8	0	17.1	0	17.1	0	17.1	0	17.1
18	82.8	70.9	0	26.2	0	18.4	0	18.4	0	18.4	0	18.4
19	81.6	72.7	0	24.5	0	19.0	0	19.0	0	19.0	0	19.0
20	80.1	74.7	0	23.2	0	20.8	0	20.8	0	20.8	0	20.8
21	78.3	74.1	0	20.5	0	18.0	0	18.0	0	18.0	0	18.0
22	76.3	72.4	0	15.9	0	13.6	0	13.6	0	13.6	0	13.6
23	74.1	70.7	0	11.5	0	8.1	0	8.1	0	8.1	0	8.1
24	71.8	68.9	0	9.2	0	3.0	0	3.0	0	3.0	0	3.0

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-59,465	0.0	-202,923	0.0	-202,923	0.0	-202,923	0.0
2	50.1	48.6	0	0.0	-230,210	0.0	-230,210	0.0	-230,210	0.0	-230,210	0.0
3	48.4	46.9	-27,595	0.0	-256,719	0.0	-256,719	0.0	-256,719	0.0	-256,719	0.0
4	47.1	45.8	-159,983	0.0	-276,536	0.0	-276,536	0.0	-276,536	0.0	-276,536	0.0
5	46.3	44.8	-169,186	0.0	-293,133	0.0	-293,133	0.0	-293,133	0.0	-293,133	0.0
6	46.0	44.5	-175,513	0.0	-306,662	0.0	-306,662	0.0	-306,662	0.0	-306,662	0.0
7	46.8	45.3	-169,943	0.0	-305,572	0.0	-305,572	0.0	-305,572	0.0	-305,572	0.0
8	48.9	47.5	-148,192	0.0	-288,738	0.0	-288,738	0.0	-288,738	0.0	-288,738	0.0
9	52.2	49.9	-113,915	0.0	-256,160	0.0	-256,160	0.0	-256,160	0.0	-256,160	0.0
10	56.2	52.5	-71,750	0.0	-212,768	0.0	-212,768	0.0	-212,768	0.0	-212,768	0.0
11	60.4	54.4	-22,900	0.0	-165,592	0.0	-165,592	0.0	-165,592	0.0	-165,592	0.0
12	64.4	56.0	0	0.0	-116,001	0.0	-116,001	0.0	-116,001	0.0	-116,001	0.0
13	67.7	57.3	0	0.0	-71,674	0.0	-71,674	0.0	-71,674	0.0	-71,674	0.0
14	69.8	58.2	0	0.0	-33,590	0.0	-33,590	0.0	-33,590	0.0	-33,590	0.0
15	70.6	58.1	0	0.0	-7,528	0.0	-7,528	0.0	-7,528	0.0	-7,528	0.0
16	70.3	57.5	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	9.8	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	7.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	4.8	-13,963	0.0	-13,963	0.0	-13,963	0.0	-13,963	0.0
20	64.4	60.8	0	1.6	-44,225	0.0	-44,225	0.0	-44,225	0.0	-44,225	0.0
21	62.1	59.4	0	0.0	-74,232	0.0	-74,232	0.0	-74,232	0.0	-74,232	0.0
22	59.6	57.3	0	0.0	-105,772	0.0	-105,772	0.0	-105,772	0.0	-105,772	0.0
23	57.0	55.1	0	0.0	-139,572	0.0	-139,572	0.0	-139,572	0.0	-139,572	0.0
24	54.5	52.7	0	0.0	-170,745	0.0	-170,745	0.0	-170,745	0.0	-170,745	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-143,306	0.0	-212,973	0.0	-212,973	0.0	-212,973	0.0	-212,973	0.0
2	49.4	47.3	-166,349	0.0	-246,136	0.0	-246,136	0.0	-246,136	0.0	-246,136	0.0
3	47.2	45.3	-187,459	0.0	-274,169	0.0	-274,169	0.0	-274,169	0.0	-274,169	0.0
4	45.3	43.4	-205,740	0.0	-300,815	0.0	-300,815	0.0	-300,815	0.0	-300,815	0.0
5	43.9	42.2	-214,861	0.0	-321,435	0.0	-321,435	0.0	-321,435	0.0	-321,435	0.0
6	43.0	41.4	-220,204	0.0	-338,854	0.0	-338,854	0.0	-338,854	0.0	-338,854	0.0
7	42.7	41.2	-214,580	0.0	-347,791	0.0	-347,791	0.0	-347,791	0.0	-347,791	0.0
8	43.5	42.0	-195,348	0.0	-348,429	0.0	-348,429	0.0	-348,429	0.0	-348,429	0.0
9	45.9	44.0	-158,143	0.0	-325,525	0.0	-325,525	0.0	-325,525	0.0	-325,525	0.0
10	49.4	46.6	-114,327	0.0	-292,493	0.0	-292,493	0.0	-292,493	0.0	-292,493	0.0
11	53.8	48.6	-63,408	0.0	-245,440	0.0	-245,440	0.0	-245,440	0.0	-245,440	0.0
12	58.4	50.6	-8,886	0.0	-196,612	0.0	-196,612	0.0	-196,612	0.0	-196,612	0.0
13	62.8	52.6	0	0.0	-140,503	0.0	-140,503	0.0	-140,503	0.0	-140,503	0.0
14	66.3	54.5	0	0.0	-92,287	0.0	-92,287	0.0	-92,287	0.0	-92,287	0.0
15	68.7	55.7	0	0.0	-54,629	0.0	-54,629	0.0	-54,629	0.0	-54,629	0.0
16	69.5	56.1	0	0.0	-31,851	0.0	-31,851	0.0	-31,851	0.0	-31,851	0.0
17	69.2	55.8	0	0.0	-24,222	0.0	-24,222	0.0	-24,222	0.0	-24,222	0.0
18	68.3	57.0	0	3.5	-29,761	0.0	-29,761	0.0	-29,761	0.0	-29,761	0.0
19	66.9	59.4	0	1.2	-41,489	0.0	-41,489	0.0	-41,489	0.0	-41,489	0.0
20	65.0	59.4	0	0.0	-61,749	0.0	-61,749	0.0	-61,749	0.0	-61,749	0.0
21	62.8	58.2	0	0.0	-88,944	0.0	-88,944	0.0	-88,944	0.0	-88,944	0.0
22	60.2	56.1	0	0.0	-116,624	0.0	-116,624	0.0	-116,624	0.0	-116,624	0.0
23	57.5	54.0	0	0.0	-148,026	0.0	-148,026	0.0	-148,026	0.0	-148,026	0.0
24	54.7	51.7	-15,118	0.0	-181,782	0.0	-181,782	0.0	-181,782	0.0	-181,782	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-208,567	0.0	-315,912	0.0	-315,912	0.0	-315,912	0.0	-315,912	0.0
2	43.2	41.1	-227,260	0.0	-337,825	0.0	-337,825	0.0	-337,825	0.0	-337,825	0.0
3	41.8	39.8	-245,582	0.0	-356,941	0.0	-356,941	0.0	-356,941	0.0	-356,941	0.0
4	40.7	38.7	-257,483	0.0	-376,232	0.0	-376,232	0.0	-376,232	0.0	-376,232	0.0
5	40.1	38.4	-266,577	0.0	-387,949	0.0	-387,949	0.0	-387,949	0.0	-387,949	0.0
6	39.9	38.4	-271,259	0.0	-395,976	0.0	-395,976	0.0	-395,976	0.0	-395,976	0.0
7	40.5	39.0	-266,807	0.0	-395,418	0.0	-395,418	0.0	-395,418	0.0	-395,418	0.0
8	42.2	40.7	-256,443	0.0	-380,215	0.0	-380,215	0.0	-380,215	0.0	-380,215	0.0
9	44.9	43.4	-228,226	0.0	-356,077	0.0	-356,077	0.0	-356,077	0.0	-356,077	0.0
10	48.2	45.8	-195,942	0.0	-326,313	0.0	-326,313	0.0	-326,313	0.0	-326,313	0.0
11	51.7	48.3	-153,016	0.0	-294,190	0.0	-294,190	0.0	-294,190	0.0	-294,190	0.0
12	55.0	50.7	-112,564	0.0	-259,840	0.0	-259,840	0.0	-259,840	0.0	-259,840	0.0
13	57.7	52.0	-73,952	0.0	-214,949	0.0	-214,949	0.0	-214,949	0.0	-214,949	0.0
14	59.5	52.6	-40,154	0.0	-179,698	0.0	-179,698	0.0	-179,698	0.0	-179,698	0.0
15	60.1	52.7	-14,811	0.0	-159,326	0.0	-159,326	0.0	-159,326	0.0	-159,326	0.0
16	59.9	52.6	0	0.0	-145,406	0.0	-145,406	0.0	-145,406	0.0	-145,406	0.0
17	59.2	52.1	0	0.0	-144,646	0.0	-144,646	0.0	-144,646	0.0	-144,646	0.0
18	58.2	51.8	-19,732	0.0	-149,148	0.0	-149,148	0.0	-149,148	0.0	-149,148	0.0
19	56.8	52.2	-48,852	0.0	-163,550	0.0	-163,550	0.0	-163,550	0.0	-163,550	0.0
20	55.0	51.4	-82,277	0.0	-187,210	0.0	-187,210	0.0	-187,210	0.0	-187,210	0.0
21	53.1	50.1	-112,455	0.0	-208,548	0.0	-208,548	0.0	-208,548	0.0	-208,548	0.0
22	51.0	48.1	-144,076	0.0	-236,051	0.0	-236,051	0.0	-236,051	0.0	-236,051	0.0
23	48.9	46.2	-167,286	0.0	-261,870	0.0	-261,870	0.0	-261,870	0.0	-261,870	0.0
24	46.9	44.1	-191,171	0.0	-286,672	0.0	-286,672	0.0	-286,672	0.0	-286,672	0.0

01 Card - Job Information

 Project: OLMSTEAD HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29805 (1 BLDG)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	YES

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	AUDITORIUM

-----CARD 20-- General Room Parameters-----

Room	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
1	1	BLOCK	2210	10	3	0		22			

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	220	12		196	0			
1	2	100	12		196	90			
1	3	220	12		196	180			
1	4	100	12		196	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	2			25	.88	.58					
1	4			25	.88	.58					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	1100	PEOPLE	255	255	2.0	WATT-SF	SUSFLUOR				

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Energy Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	35	KW	FGHEAT						

Room Number	Cooling		Heating		Cooling		Heating		Reheat Minimum	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	7.5	CFM-P	7.5	CFM-P						

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	---Cooling---		---Heating---		---Cooling---		---Heating---		Value	Units
1	1	CFM-SF	1	CFM-SF						

Number	Description
1	FAN COIL UNITS

System		-----OPTIONAL VENTILATION SYSTEM-----					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBvh	SADBvh	Schedule	Schedule	Pressure
1	SZ						

[illegible][illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

FGHEAT SCHD FOR HEAT LOAD CALCS

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

YES AVAILABLE (100%)

System:

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 75
24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 0
24

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
------	-------------

-----	-----
-------	-------

0	72
---	----

24	
----	--

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	0	0.0	0	0.0	-31,772	0.0	-31,772	0.0	-31,772	0.0
2	49.4	47.3	-9,884	0.0	0	0.0	-37,657	0.0	-37,657	0.0	-37,657	0.0
3	47.2	45.3	-30,908	0.0	0	0.0	-45,939	0.0	-45,939	0.0	-45,939	0.0
4	45.3	43.4	-36,691	0.0	-908	0.0	-53,265	0.0	-53,265	0.0	-53,265	0.0
5	43.9	42.2	-43,087	0.0	-58,657	0.0	-58,657	0.0	-58,657	0.0	-58,657	0.0
6	43.0	41.4	-47,233	0.0	-65,218	0.0	-65,218	0.0	-65,218	0.0	-65,218	0.0
7	42.7	41.2	-49,747	0.0	-69,236	0.0	-69,236	0.0	-69,236	0.0	-69,236	0.0
8	43.5	42.0	-49,096	0.0	-72,189	0.0	-72,189	0.0	-72,189	0.0	-72,189	0.0
9	45.9	44.0	-41,651	0.0	-71,797	0.0	-71,797	0.0	-71,797	0.0	-71,797	0.0
10	49.4	46.6	-33,463	0.0	-68,771	0.0	-68,771	0.0	-68,771	0.0	-68,771	0.0
11	53.8	48.6	-19,241	0.0	-59,589	0.0	-59,589	0.0	-59,589	0.0	-59,589	0.0
12	58.4	50.6	-2,915	0.0	-51,340	0.0	-51,340	0.0	-51,340	0.0	-51,340	0.0
13	62.8	52.6	0	0.0	-40,019	0.0	-40,019	0.0	-40,019	0.0	-40,019	0.0
14	66.3	54.5	0	0.0	-24,862	0.0	-24,862	0.0	-24,862	0.0	-24,862	0.0
15	68.7	55.7	0	0.0	-13,329	0.0	-13,329	0.0	-13,329	0.0	-13,329	0.0
16	69.5	56.1	0	0.0	-3,563	0.0	-3,563	0.0	-3,563	0.0	-3,563	0.0
17	69.2	55.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	1.9	-2,646	0.0	-2,646	0.0	-2,646	0.0	-2,646	0.0
21	62.8	58.2	0	1.1	-7,840	0.0	-7,840	0.0	-7,840	0.0	-7,840	0.0
22	60.2	56.1	0	0.1	-13,991	0.0	-13,991	0.0	-13,991	0.0	-13,991	0.0
23	57.5	54.0	0	0.0	-19,544	0.0	-19,544	0.0	-19,544	0.0	-19,544	0.0
24	54.7	51.7	0	0.0	-26,342	0.0	-26,342	0.0	-26,342	0.0	-26,342	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-39,301	0.0	-61,610	0.0	-61,609	0.0	-61,609	0.0	-61,609	0.0
2	43.2	41.1	-44,640	0.0	-67,164	0.0	-67,164	0.0	-67,164	0.0	-67,164	0.0
3	41.8	39.8	-52,545	0.0	-71,609	0.0	-71,609	0.0	-71,609	0.0	-71,609	0.0
4	40.7	38.7	-57,271	0.0	-76,012	0.0	-76,012	0.0	-76,012	0.0	-76,012	0.0
5	40.1	38.4	-61,606	0.0	-82,215	0.0	-82,215	0.0	-82,215	0.0	-82,215	0.0
6	39.9	38.4	-65,023	0.0	-86,193	0.0	-86,193	0.0	-86,193	0.0	-86,193	0.0
7	40.5	39.0	-67,026	0.0	-90,212	0.0	-90,212	0.0	-90,212	0.0	-90,212	0.0
8	42.2	40.7	-68,896	0.0	-92,034	0.0	-92,034	0.0	-92,034	0.0	-92,034	0.0
9	44.9	43.4	-62,976	0.0	-88,817	0.0	-88,817	0.0	-88,817	0.0	-88,817	0.0
10	48.2	45.8	-55,593	0.0	-85,795	0.0	-85,795	0.0	-85,795	0.0	-85,795	0.0
11	51.7	48.3	-43,029	0.0	-78,402	0.0	-78,402	0.0	-78,402	0.0	-78,402	0.0
12	55.0	50.7	-30,451	0.0	-68,196	0.0	-68,196	0.0	-68,196	0.0	-68,196	0.0
13	57.7	52.0	-17,729	0.0	-58,748	0.0	-58,748	0.0	-58,748	0.0	-58,748	0.0
14	59.5	52.6	-3,117	0.0	-47,480	0.0	-47,480	0.0	-47,480	0.0	-47,480	0.0
15	60.1	52.7	0	0.0	-38,262	0.0	-38,262	0.0	-38,262	0.0	-38,262	0.0
16	59.9	52.6	0	0.0	-28,694	0.0	-28,694	0.0	-28,694	0.0	-28,694	0.0
17	59.2	52.1	0	0.0	-25,639	0.0	-25,639	0.0	-25,639	0.0	-25,639	0.0
18	58.2	51.8	0	0.0	-25,745	0.0	-25,745	0.0	-25,745	0.0	-25,745	0.0
19	56.8	52.2	0	0.0	-25,905	0.0	-25,905	0.0	-25,905	0.0	-25,905	0.0
20	55.0	51.4	0	0.0	-31,802	0.0	-31,802	0.0	-31,802	0.0	-31,802	0.0
21	53.1	50.1	0	0.0	-35,255	0.0	-35,255	0.0	-35,255	0.0	-35,255	0.0
22	51.0	48.1	0	0.0	-41,985	0.0	-41,985	0.0	-41,985	0.0	-41,985	0.0
23	48.9	46.2	0	0.0	-47,864	0.0	-47,864	0.0	-47,864	0.0	-47,864	0.0
24	46.9	44.1	-6,153	0.0	-53,156	0.0	-53,156	0.0	-53,156	0.0	-53,156	0.0

01 Card - Job Information

Project: CONRAD HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29807 (1 BLDG)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	YES

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	LIBRARY

-----CARD 20-- General Room Parameters -----

Room	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
1	1	BLOCK	1180	10	3	0		20			

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag		Average	Floor
1		50		CLGCONST				HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Roof	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Equal to Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Constuc	Type	Direction	Tilt	Alpha	Reflectance Multiplier
1	1	118	12		196	0				
1	2	100	12		196	90				
1	3	118	12		196	180				
1	4	100	12		196	270				

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of Windows	U-Value	Coefficient	Shading Type	Shading Type	Solar to Ret. Air	Transmittance	Visible Reflectance
1	1	2.5	10.5	4	.88	.62					
1	2	2.5	10.5	4	.88	.62					
1	3	2.5	10.5	4	.88	.62					
1	4	2.5	10.5	6	.88	.62					

-----CARD 26-- Schedules -----

Room	People	Lights	Ventilation	Infiltration	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	People	FGHEAT	YES	YES	Minimum	Fans	Fan	Fan	Exhaust	Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Percent	--- Daylighting ---		
Number	Value	Units	Sensible	Latent	Value	Units	Fixture Type	Ballast Factor	Lights to Ret. Air	Reference Point 1	Reference Point 2
1	30	PEOPLE	255	255	2.0	WATT-SF	SUSFLUOR				

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	PC PRNT COPIERS	8270	BTUH	FGHEAT						

Room		Ventilation		Infiltration		Reheat Minimum			
Room Number	Cooling		Heating		Cooling		Heating		
	Value	Units	Value	Units	Value	Units	Value	Units	
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF	

Room Number		Main				Auxiliary				Room Exhaust	
		Cooling		Heating		Cooling		Heating			
Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF							

Number	Description
1	FAN COIL UNITS

System Set Number		Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	SZ						

[illegible]

-----CARD 42--- Fan SP and Duct Parameters-----

System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path

1

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

FGHEAT SCHD FOR HEAT LOAD CALCS

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

YES AVAILABLE (100%)

System:

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100
24

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*****
*****
**
**          T R A C E   6 0 0   A N A L Y S I S          **
**
**          by          **
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OLMSTEAD HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29805 (1 BLDG)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 9:12:55 8/16/94
Dataset Name: FGTPS19 .TM

System 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==> Mo/Hr: 8/16 * Mo/Hr: 6/18 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 96/ 76/105.0 * OADB: 96 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	45,887	0		45,887	1.27	*	58,709	3.90	*	-37,958	-37,958	0.91
Glass Solar	646,800	0		646,800	17.92	*	633,600	42.08	*	0	0	0.00
Glass Cond	265,122	0		265,122	7.35	*	280,078	18.60	*	-668,923	-668,923	16.00
Wall Cond	366,259	0		366,259	10.15	*	435,698	28.94	*	-612,701	-612,701	14.65
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	171,483			171,483	4.75	*	97,474	6.47	*	-263,600	-263,600	6.30
Sub Total==>	1,495,551	0		1,495,551	41.44	*	1,505,558	100.00	*	-1,583,183	-1,583,183	37.86
Internal Loads												
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	2,113,088	58.56	*	0	0.00	*	0	-2,598,561	62.14
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	1,495,551	0	0	3,608,639	100.00	*	1,505,558	100.00	*	-1,583,183	-4,181,744	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Floor	120,000	
Main Clg	300.7	3,608.6	2,641.4	120,000	84.2	70.5	90.8	63.7	61.9	Part	0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	Roof	12,000	0 0
Totals	300.7	3,608.6								Wall	52,800	13,200 25

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)--		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	43.4	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F								
Main Htg	-4,181.7	120,000	48.5	79.9	Vent	52,050	52,050	Clg Cfm/Sqft	1.00	SADB	63.7	79.9
Aux Htg	0.0	0	0.0	0.0	Infil	4,224	5,280	Clg Cfm/Ton	399.04	Plenum	75.0	68.0
Preheat	-2,024.9	120,000	48.5	63.7	Supply	120,000	120,000	Clg Sqft/Ton	399.04	Return	75.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Sqft	30.07	Ret/OA	84.2	48.5
Humidif	0.0	0	0.0	0.0	Return	120,000	120,000	No. People	3,470	Runarnd	75.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	52,050	52,050	Htg % OA	43.4	Fn MtrTD	0.0	0.0
Total	-4,181.7				Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
					Auxil	0	0	Htg Btuh/SqFt	-34.85	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-2,855,395	0.0	-2,995,015	0.0	-2,995,015	0.0	-2,995,015	0.0	-2,995,015	0.0
2	32.9	30.7	-2,819,686	0.0	-3,055,622	0.0	-3,055,622	0.0	-3,055,622	0.0	-3,055,622	0.0
3	33.1	31.3	-2,798,346	0.0	-3,084,448	0.0	-3,084,448	0.0	-3,084,448	0.0	-3,084,448	0.0
4	33.9	32.1	-2,778,357	0.0	-3,062,158	0.0	-3,062,158	0.0	-3,062,158	0.0	-3,062,158	0.0
5	35.2	33.5	-2,466,710	0.0	-3,001,502	0.0	-3,001,502	0.0	-3,001,502	0.0	-3,001,502	0.0
6	37.0	35.4	-2,446,582	0.0	-2,902,827	0.0	-2,902,827	0.0	-2,902,827	0.0	-2,902,827	0.0
7	39.0	37.6	-2,413,686	0.0	-2,787,846	0.0	-2,787,846	0.0	-2,787,846	0.0	-2,787,846	0.0
8	41.3	40.1	-2,300,366	0.0	-2,655,603	0.0	-2,655,603	0.0	-2,655,603	0.0	-2,655,603	0.0
9	43.7	42.5	-1,939,539	0.0	-2,392,307	0.0	-2,392,307	0.0	-2,392,307	0.0	-2,392,307	0.0
10	46.1	44.0	-1,528,867	0.0	-2,156,071	0.0	-2,156,071	0.0	-2,156,071	0.0	-2,156,071	0.0
11	48.4	45.0	-1,104,165	0.0	-1,905,597	0.0	-1,905,597	0.0	-1,905,597	0.0	-1,905,597	0.0
12	50.5	45.6	-715,095	0.0	-1,704,549	0.0	-1,704,549	0.0	-1,704,549	0.0	-1,704,549	0.0
13	52.2	46.1	-444,321	0.0	-1,523,614	0.0	-1,523,614	0.0	-1,523,614	0.0	-1,523,614	0.0
14	53.5	46.4	-222,667	0.0	-1,360,683	0.0	-1,360,683	0.0	-1,360,683	0.0	-1,360,683	0.0
15	54.3	46.3	-61,852	0.0	-1,256,796	0.0	-1,256,796	0.0	-1,256,796	0.0	-1,256,796	0.0
16	54.6	46.1	0	0.0	-1,189,715	0.0	-1,189,715	0.0	-1,189,715	0.0	-1,189,715	0.0
17	54.0	45.9	-94,315	0.0	-1,214,091	0.0	-1,214,091	0.0	-1,214,091	0.0	-1,214,091	0.0
18	52.5	45.0	-434,731	0.0	-1,350,818	0.0	-1,350,818	0.0	-1,350,818	0.0	-1,350,818	0.0
19	50.1	44.8	-767,141	0.0	-1,551,558	0.0	-1,551,558	0.0	-1,551,558	0.0	-1,551,558	0.0
20	47.1	43.3	-1,062,340	0.0	-1,803,407	0.0	-1,803,407	0.0	-1,803,407	0.0	-1,803,407	0.0
21	43.7	40.4	-1,311,404	0.0	-2,094,110	0.0	-2,094,110	0.0	-2,094,110	0.0	-2,094,110	0.0
22	40.4	37.3	-1,560,777	0.0	-2,380,412	0.0	-2,380,412	0.0	-2,380,412	0.0	-2,380,412	0.0
23	37.3	34.9	-1,768,104	0.0	-2,635,850	0.0	-2,635,850	0.0	-2,635,850	0.0	-2,635,850	0.0
24	34.9	32.6	-1,914,937	0.0	-2,829,998	0.0	-2,829,998	0.0	-2,829,998	0.0	-2,829,998	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-1,963,422	0.0	-2,371,095	0.0	-2,371,095	0.0	-2,371,095	0.0	-2,371,095	0.0
2	39.7	37.1	-2,083,229	0.0	-2,531,549	0.0	-2,531,549	0.0	-2,531,549	0.0	-2,531,549	0.0
3	37.8	35.1	-2,184,787	0.0	-2,715,138	0.0	-2,715,138	0.0	-2,715,138	0.0	-2,715,138	0.0
4	36.3	33.8	-2,297,019	0.0	-2,835,050	0.0	-2,835,050	0.0	-2,835,050	0.0	-2,835,050	0.0
5	35.1	32.6	-2,352,635	0.0	-2,953,328	0.0	-2,953,328	0.0	-2,953,328	0.0	-2,953,328	0.0
6	34.4	32.0	-2,341,170	0.0	-3,023,242	0.0	-3,023,242	0.0	-3,023,242	0.0	-3,023,242	0.0
7	34.1	31.9	-2,315,829	0.0	-3,077,662	0.0	-3,077,662	0.0	-3,077,662	0.0	-3,077,662	0.0
8	34.6	32.4	-2,171,841	0.0	-3,057,490	0.0	-3,057,490	0.0	-3,057,490	0.0	-3,057,490	0.0
9	36.0	33.8	-1,811,184	0.0	-2,871,710	0.0	-2,871,710	0.0	-2,871,710	0.0	-2,871,710	0.0
10	38.2	34.7	-1,433,563	0.0	-2,666,622	0.0	-2,666,622	0.0	-2,666,622	0.0	-2,666,622	0.0
11	40.9	36.2	-1,046,697	0.0	-2,422,126	0.0	-2,422,126	0.0	-2,422,126	0.0	-2,422,126	0.0
12	43.9	37.4	-721,303	0.0	-2,156,620	0.0	-2,156,620	0.0	-2,156,620	0.0	-2,156,620	0.0
13	46.9	39.4	-448,527	0.0	-1,867,147	0.0	-1,867,147	0.0	-1,867,147	0.0	-1,867,147	0.0
14	49.7	41.4	-246,865	0.0	-1,647,868	0.0	-1,647,868	0.0	-1,647,868	0.0	-1,647,868	0.0
15	51.8	42.8	-85,148	0.0	-1,429,797	0.0	-1,429,797	0.0	-1,429,797	0.0	-1,429,797	0.0
16	53.2	43.9	-46,073	0.0	-1,296,015	0.0	-1,296,015	0.0	-1,296,015	0.0	-1,296,015	0.0
17	53.7	44.2	-98,742	0.0	-1,245,471	0.0	-1,245,471	0.0	-1,245,471	0.0	-1,245,471	0.0
18	53.4	44.4	-335,777	0.0	-1,270,474	0.0	-1,270,474	0.0	-1,270,474	0.0	-1,270,474	0.0
19	52.7	44.4	-670,029	0.0	-1,380,402	0.0	-1,380,402	0.0	-1,380,402	0.0	-1,380,402	0.0
20	51.5	45.2	-972,746	0.0	-1,507,380	0.0	-1,507,380	0.0	-1,507,380	0.0	-1,507,380	0.0
21	50.0	44.6	-1,216,148	0.0	-1,665,157	0.0	-1,665,157	0.0	-1,665,157	0.0	-1,665,157	0.0
22	48.1	43.3	-1,462,339	0.0	-1,841,627	0.0	-1,841,627	0.0	-1,841,627	0.0	-1,841,627	0.0
23	46.1	41.8	-1,670,643	0.0	-2,013,786	0.0	-2,013,786	0.0	-2,013,786	0.0	-2,013,786	0.0
24	43.9	40.1	-1,810,661	0.0	-2,191,765	0.0	-2,191,765	0.0	-2,191,765	0.0	-2,191,765	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

March		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3 46.8	-977,670	0.0	-362,850	0.0	-1,489,107	0.0	-1,489,107	0.0	-1,489,107	0.0
2	48.7 44.6	-1,137,702	0.0	-1,688,761	0.0	-1,688,761	0.0	-1,688,761	0.0	-1,688,761	0.0
3	46.6 42.9	-1,246,012	0.0	-1,876,698	0.0	-1,876,698	0.0	-1,876,698	0.0	-1,876,698	0.0
4	44.9 41.4	-1,370,589	0.0	-2,043,981	0.0	-2,043,981	0.0	-2,043,981	0.0	-2,043,981	0.0
5	43.9 40.8	-1,426,749	0.0	-2,138,240	0.0	-2,138,240	0.0	-2,138,240	0.0	-2,138,240	0.0
6	43.5 40.8	-1,435,889	0.0	-2,199,559	0.0	-2,199,559	0.0	-2,199,559	0.0	-2,199,559	0.0
7	44.0 41.4	-1,371,252	0.0	-2,197,779	0.0	-2,197,779	0.0	-2,197,779	0.0	-2,197,779	0.0
8	45.4 42.7	-1,112,474	0.0	-2,046,480	0.0	-2,046,480	0.0	-2,046,480	0.0	-2,046,480	0.0
9	47.7 44.3	-741,202	0.0	-1,832,316	0.0	-1,832,316	0.0	-1,832,316	0.0	-1,832,316	0.0
10	50.6 45.8	-348,086	0.0	-1,559,132	0.0	-1,559,132	0.0	-1,559,132	0.0	-1,559,132	0.0
11	53.9 47.4	0	0.0	-1,232,522	0.0	-1,232,522	0.0	-1,232,522	0.0	-1,232,522	0.0
12	57.4 49.0	0	0.0	-912,522	0.0	-912,522	0.0	-912,522	0.0	-912,522	0.0
13	60.7 50.8	0	0.0	-636,707	0.0	-636,707	0.0	-636,707	0.0	-636,707	0.0
14	63.6 52.7	0	0.0	-358,387	0.0	-358,387	0.0	-358,387	0.0	-358,387	0.0
15	65.9 53.7	0	56.5	-184,279	0.0	-184,279	0.0	-184,279	0.0	-184,279	0.0
16	67.3 54.4	0	76.3	-44,438	0.0	-44,438	0.0	-44,438	0.0	-44,438	0.0
17	67.8 54.6	0	70.3	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4 54.8	0	51.3	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4 55.2	0	17.4	-160,821	0.0	-160,821	0.0	-160,821	0.0	-160,821	0.0
20	64.7 56.0	-134,917	0.0	-333,006	0.0	-333,006	0.0	-333,006	0.0	-333,006	0.0
21	62.5 56.0	-416,360	0.0	-537,846	0.0	-537,846	0.0	-537,846	0.0	-537,846	0.0
22	60.0 54.1	-687,825	0.0	-758,653	0.0	-758,653	0.0	-758,653	0.0	-758,653	0.0
23	57.1 51.9	-921,480	0.0	-985,135	0.0	-985,135	0.0	-985,135	0.0	-985,135	0.0
24	54.2 49.4	-51,996	0.0	-1,242,762	0.0	-1,242,762	0.0	-1,242,762	0.0	-1,242,762	0.0

April		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0 56.5	-109,568	0.0	-29,262	0.0	0	0.0	0	0.0	0	0.0
2	58.9 54.9	-268,912	0.0	0	0.0	-89,455	0.0	-89,455	0.0	-89,455	0.0
3	57.0 53.5	-376,646	0.0	-565,910	0.0	-961,646	0.0	-961,646	0.0	-961,646	0.0
4	55.4 52.4	-461,659	0.0	-1,123,573	0.0	-1,123,573	0.0	-1,123,573	0.0	-1,123,573	0.0
5	54.2 51.4	-524,631	0.0	-1,230,057	0.0	-1,230,057	0.0	-1,230,057	0.0	-1,230,057	0.0
6	53.5 50.9	-533,452	0.0	-1,307,113	0.0	-1,307,113	0.0	-1,307,113	0.0	-1,307,113	0.0
7	53.2 51.1	-436,165	0.0	-1,325,732	0.0	-1,325,732	0.0	-1,325,732	0.0	-1,325,732	0.0
8	53.9 51.5	-175,165	0.0	-1,255,961	0.0	-1,255,961	0.0	-1,255,961	0.0	-1,255,961	0.0
9	55.9 52.1	0	0.0	-1,091,849	0.0	-1,091,849	0.0	-1,091,849	0.0	-1,091,849	0.0
10	58.9 53.2	0	0.0	-777,200	0.0	-777,200	0.0	-777,200	0.0	-777,200	0.0
11	62.6 55.2	0	0.0	-434,930	0.0	-434,930	0.0	-434,930	0.0	-434,930	0.0
12	66.5 57.3	0	17.9	-111,855	0.0	-111,855	0.0	-111,855	0.0	-111,855	0.0
13	70.2 59.6	0	99.3	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2 61.0	0	117.3	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2 62.2	0	129.6	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9 62.2	0	131.8	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6 62.0	0	126.7	0	3.4	0	3.4	0	3.4	0	3.4
18	74.9 61.7	0	111.1	0	35.4	0	35.4	0	35.4	0	35.4
19	73.7 62.0	0	84.9	0	23.8	0	23.8	0	23.8	0	23.8
20	72.1 62.4	0	57.1	0	8.9	0	8.9	0	8.9	0	8.9
21	70.2 63.3	0	32.5	-60,310	0.0	-60,310	0.0	-60,310	0.0	-60,310	0.0
22	68.0 62.5	0	12.8	-262,436	0.0	-262,436	0.0	-262,436	0.0	-262,436	0.0
23	65.7 60.5	-66,908	0.0	-491,728	0.0	-491,728	0.0	-491,728	0.0	-491,728	0.0
24	63.4 58.5	-253,255	0.0	-32,335	0.0	-32,335	0.0	-32,335	0.0	-32,335	0.0

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OAD8	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		0.0	-251,981			0.0	-251,981			0.0	-251,981			0.0	-251,981			0.0
2	65.7	61.5		-149,144		0.0	-448,239			0.0	-448,239			0.0	-448,239			0.0	-448,239			0.0
3	63.6	59.7		-30,296		0.0	-646,420			0.0	-646,420			0.0	-646,420			0.0	-646,420			0.0
4	61.8	58.4		-128,704		0.0	-38,872			0.0	-38,872			0.0	-38,872			0.0	-38,872			0.0
5	60.5	57.1		-184,864		0.0				0.0				0.0				0.0				0.0
6	59.7	56.5		-195,623		0.0	-178,432			0.0	-178,432			0.0	-178,432			0.0	-178,432			0.0
7	59.4	56.5		-28,345		0.0	-766,642			0.0	-766,642			0.0	-766,642			0.0	-766,642			0.0
8	60.1	56.3		0		22.2	-656,902			0.0	-656,902			0.0	-656,902			0.0	-656,902			0.0
9	62.4	56.3		0		49.5	-487,799			0.0	-487,799			0.0	-487,799			0.0	-487,799			0.0
10	65.7	57.2		0		79.8	-146,115			0.0	-146,115			0.0	-146,115			0.0	-146,115			0.0
11	69.9	58.9		0		110.4				0.0				0.0				0.0				0.0
12	74.3	60.9		0		139.5				0.0				0.0				0.0				0.0
13	78.5	63.7		0		160.8				0.0				0.0				0.0				0.0
14	81.9	65.3		0		178.3				0	21.2			0	21.2			0	21.2			21.2
15	84.1	66.9		0		191.3				0	97.3			0	97.3			0	97.3			97.3
16	84.9	67.1		0		192.9				0	103.6			0	103.6			0	103.6			103.6
17	84.6	67.3		0		188.1				0	104.6			0	104.6			0	104.6			104.6
18	83.8	67.1		0		173.6				0	101.8			0	101.8			0	101.8			101.8
19	82.4	67.5		0		150.2				0	89.6			0	89.6			0	89.6			89.6
20	80.6	68.9		0		118.9				0	72.1			0	72.1			0	72.1			72.1
21	78.5	71.0		0		92.4				0	78.7			0	78.7			0	78.7			78.7
22	76.1	69.9		0		71.3				0	50.5			0	50.5			0	50.5			50.5
23	73.4	68.0		0		51.2				0	17.6			0	17.6			0	17.6			17.6
24	70.8	65.5		0		35.1	-15,334			0.0	-15,334			0.0	-15,334			0.0	-15,334			0.0

June	----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1	0	90.0		0	0	42.4		0	48.8	0	48.8		0	48.8		48.8
2	72.6	68.4	0	75.5		0	0	19.1		0	18.0	0	18.0		0	18.0		18.0
3	70.9	67.3	0	66.3		0	0	0.0		0	0.0	0	0.0		0	0.0		0.0
4	69.6	66.5	0	56.4		-150,861	0.0	-150,861	0.0	-150,861	0.0	-150,861	0.0		-150,861	0.0		0.0
5	68.7	65.8	0	51.6		-245,207	0.0	-245,207	0.0	-245,207	0.0	-245,207	0.0		-245,207	0.0		0.0
6	68.5	65.7	0	50.2		-294,922	0.0	-294,922	0.0	-294,922	0.0	-294,922	0.0		-294,922	0.0		0.0
7	69.0	66.3	0	67.8		-220,874	0.0	-220,874	0.0	-220,874	0.0	-220,874	0.0		-220,874	0.0		0.0
8	70.6	66.9	0	95.9		-53,444	0.0	-53,444	0.0	-53,444	0.0	-53,444	0.0		-53,444	0.0		0.0
9	73.0	67.7	0	125.6		0	15.1	0	15.1	0	15.1	0	15.1		0	15.1		15.1
10	76.1	68.1	0	158.6		0	41.3	0	41.3	0	41.3	0	41.3		0	41.3		41.3
11	79.5	69.1	0	190.4		0	70.1	0	70.1	0	70.1	0	70.1		0	70.1		70.1
12	82.9	70.1	0	221.2		0	97.1	0	97.1	0	97.1	0	97.1		0	97.1		97.1
13	86.0	71.0	0	242.5		0	122.5	0	122.5	0	122.5	0	122.5		0	122.5		122.5
14	88.4	72.5	0	262.4		0	156.8	0	156.8	0	156.8	0	156.8		0	156.8		156.8
15	90.0	74.0	0	275.7		0	194.6	0	194.6	0	194.6	0	194.6		0	194.6		194.6
16	90.5	73.7	0	281.6		0	182.7	0	182.7	0	182.7	0	182.7		0	182.7		182.7
17	90.3	74.2	0	281.7		0	200.0	0	200.0	0	200.0	0	200.0		0	200.0		200.0
18	89.4	73.9	0	254.4		0	199.2	0	199.2	0	199.2	0	199.2		0	199.2		199.2
19	88.1	74.5	0	230.4		0	184.9	0	184.9	0	184.9	0	184.9		0	184.9		184.9
20	86.4	75.3	0	192.8		0	173.5	0	173.5	0	173.5	0	173.5		0	173.5		173.5
21	84.3	76.5	0	176.1		0	183.0	0	183.0	0	183.0	0	183.0		0	183.0		183.0
22	81.9	75.7	0	150.4		0	162.0	0	162.0	0	162.0	0	162.0		0	162.0		162.0
23	79.5	74.0	0	130.3		0	123.4	0	123.4	0	123.4	0	123.4		0	123.4		123.4
24	77.0	72.1	0	111.0		0	81.5	0	81.5	0	81.5	0	81.5		0	81.5		81.5

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

July Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	102.1	0	29.1	0	33.4	0	33.4	0	33.4
2	72.4	69.4	0	83.2	0	11.6	0	11.4	0	11.4	0	11.4
3	71.3	68.4	0	72.9	-44,844	0.0	-44,844	0.0	-44,844	0.0	-44,844	0.0
4	70.5	67.7	0	65.8	-133,014	0.0	-133,014	0.0	-133,014	0.0	-133,014	0.0
5	70.0	67.4	0	60.1	-202,738	0.0	-202,738	0.0	-202,738	0.0	-202,738	0.0
6	69.9	67.5	0	57.5	-245,131	0.0	-245,131	0.0	-245,131	0.0	-245,131	0.0
7	70.3	68.0	0	79.9	-167,024	0.0	-167,024	0.0	-167,024	0.0	-167,024	0.0
8	71.7	69.0	0	105.6	0	0.0	0	0.0	0	0.0	0	0.0
9	73.7	69.5	0	131.4	0	31.2	0	31.2	0	31.2	0	31.2
10	76.2	70.6	0	156.9	0	62.8	0	62.8	0	62.8	0	62.8
11	78.9	71.8	0	184.9	0	87.7	0	87.7	0	87.7	0	87.7
12	81.4	73.0	0	224.4	0	125.4	0	125.4	0	125.4	0	125.4
13	83.4	74.4	0	239.9	0	148.0	0	148.0	0	148.0	0	148.0
14	84.8	74.8	0	257.5	0	162.2	0	162.2	0	162.2	0	162.2
15	85.2	75.0	0	270.3	0	175.5	0	175.5	0	175.5	0	175.5
16	85.1	75.0	0	277.3	0	175.9	0	175.9	0	175.9	0	175.9
17	84.6	74.7	0	279.7	0	170.5	0	170.5	0	170.5	0	170.5
18	83.8	74.6	0	255.1	0	171.2	0	171.2	0	171.2	0	171.2
19	82.7	74.6	0	233.7	0	172.2	0	172.2	0	172.2	0	172.2
20	81.4	74.4	0	197.4	0	152.5	0	152.5	0	152.5	0	152.5
21	79.9	74.9	0	172.3	0	145.2	0	145.2	0	145.2	0	145.2
22	78.4	74.0	0	150.8	0	112.6	0	112.6	0	112.6	0	112.6
23	76.8	72.7	0	133.8	0	79.0	0	79.0	0	79.0	0	79.0
24	75.2	71.6	0	119.9	0	58.7	0	58.7	0	58.7	0	58.7

August Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	99.4	0	49.5	0	55.5	0	55.5	0	55.5
2	73.2	70.3	0	77.7	0	28.0	0	27.3	0	27.3	0	27.3
3	71.7	68.9	0	63.9	0	0.0	0	0.0	0	0.0	0	0.0
4	70.4	67.8	0	56.0	-107,778	0.0	-107,778	0.0	-107,778	0.0	-107,778	0.0
5	69.5	66.8	0	49.4	-201,092	0.0	-201,092	0.0	-201,092	0.0	-201,092	0.0
6	68.9	66.4	0	48.5	-272,192	0.0	-272,192	0.0	-272,192	0.0	-272,192	0.0
7	68.7	66.4	0	57.5	-290,801	0.0	-290,801	0.0	-290,801	0.0	-290,801	0.0
8	69.2	66.8	0	88.4	-212,836	0.0	-212,836	0.0	-212,836	0.0	-212,836	0.0
9	70.8	67.7	0	122.4	-22,893	0.0	-22,893	0.0	-22,893	0.0	-22,893	0.0
10	73.2	67.7	0	151.5	0	24.5	0	24.5	0	24.5	0	24.5
11	76.2	68.8	0	185.0	0	48.1	0	48.1	0	48.1	0	48.1
12	79.3	70.3	0	213.0	0	83.0	0	83.0	0	83.0	0	83.0
13	82.3	72.2	0	249.8	0	123.0	0	123.0	0	123.0	0	123.0
14	84.7	73.7	0	273.2	0	150.3	0	150.3	0	150.3	0	150.3
15	86.3	74.6	0	289.5	0	183.4	0	183.4	0	183.4	0	183.4
16	86.8	75.1	0	296.3	0	190.7	0	190.7	0	190.7	0	190.7
17	86.6	75.1	0	274.5	0	191.6	0	191.6	0	191.6	0	191.6
18	86.0	75.3	0	261.9	0	206.5	0	206.5	0	206.5	0	206.5
19	85.1	76.0	0	232.7	0	188.7	0	188.7	0	188.7	0	188.7
20	83.8	76.8	0	198.4	0	184.9	0	184.9	0	184.9	0	184.9
21	82.3	77.2	0	188.2	0	181.7	0	181.7	0	181.7	0	181.7
22	80.6	76.3	0	148.2	0	166.2	0	166.2	0	166.2	0	166.2
23	78.7	75.3	0	128.7	0	122.8	0	122.8	0	122.8	0	122.8
24	76.8	73.7	0	111.2	0	87.8	0	87.8	0	87.8	0	87.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	36.5	-143,374	0.0	-143,374	0.0	-143,374	0.0	-143,374	0.0
2	67.6	65.0	0	23.6	-338,764	0.0	-338,764	0.0	-338,764	0.0	-338,764	0.0
3	65.8	63.4	0	14.7	-492,666	0.0	-492,666	0.0	-492,666	0.0	-492,666	0.0
4	64.3	62.2	0	5.5	-30,078	0.0	-30,078	0.0	-30,078	0.0	-30,078	0.0
5	63.1	61.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	1.9	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	4.6	-341,761	0.0	-341,761	0.0	-341,761	0.0	-341,761	0.0
8	62.9	60.9	0	25.8	-528,420	0.0	-528,420	0.0	-528,420	0.0	-528,420	0.0
9	64.7	61.8	0	54.9	-339,301	0.0	-339,301	0.0	-339,301	0.0	-339,301	0.0
10	67.6	62.1	0	86.8	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	118.9	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	144.5	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	177.9	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	202.5	0	55.5	0	55.5	0	55.5	0	55.5
15	83.0	70.0	0	219.5	0	107.1	0	107.1	0	107.1	0	107.1
16	83.7	70.5	0	223.2	0	119.7	0	119.7	0	119.7	0	119.7
17	83.4	70.5	0	204.5	0	118.6	0	118.6	0	118.6	0	118.6
18	82.8	70.9	0	180.1	0	119.6	0	119.6	0	119.6	0	119.6
19	81.6	72.7	0	156.8	0	114.5	0	114.5	0	114.5	0	114.5
20	80.1	74.7	0	135.2	0	126.3	0	126.3	0	126.3	0	126.3
21	78.3	74.1	0	111.7	0	106.7	0	106.7	0	106.7	0	106.7
22	76.3	72.4	0	78.4	0	71.6	0	71.6	0	71.6	0	71.6
23	74.1	70.7	0	61.1	0	38.1	0	38.1	0	38.1	0	38.1
24	71.8	68.9	0	46.4	0	6.2	0	6.2	0	6.2	0	6.2

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	-35,535	0.0	-40,862	0.0	-1,332,903	0.0	-1,332,903	0.0	-1,332,903	0.0
2	50.1	48.6	0	0.0	-1,528,431	0.0	-1,528,431	0.0	-1,528,431	0.0	-1,528,431	0.0
3	48.4	46.9	-871,654	0.0	-1,667,112	0.0	-1,667,112	0.0	-1,667,112	0.0	-1,667,112	0.0
4	47.1	45.8	-1,133,131	0.0	-1,813,713	0.0	-1,813,713	0.0	-1,813,713	0.0	-1,813,713	0.0
5	46.3	44.8	-1,220,433	0.0	-1,899,922	0.0	-1,899,922	0.0	-1,899,922	0.0	-1,899,922	0.0
6	46.0	44.5	-1,201,063	0.0	-1,991,035	0.0	-1,991,035	0.0	-1,991,035	0.0	-1,991,035	0.0
7	46.8	45.3	-1,155,376	0.0	-1,944,114	0.0	-1,944,114	0.0	-1,944,114	0.0	-1,944,114	0.0
8	48.9	47.5	-894,879	0.0	-1,750,793	0.0	-1,750,793	0.0	-1,750,793	0.0	-1,750,793	0.0
9	52.2	49.9	-499,100	0.0	-1,463,118	0.0	-1,463,118	0.0	-1,463,118	0.0	-1,463,118	0.0
10	56.2	52.5	-68,434	0.0	-1,093,356	0.0	-1,093,356	0.0	-1,093,356	0.0	-1,093,356	0.0
11	60.4	54.4	0	0.0	-705,584	0.0	-705,584	0.0	-705,584	0.0	-705,584	0.0
12	64.4	56.0	0	0.0	-345,067	0.0	-345,067	0.0	-345,067	0.0	-345,067	0.0
13	67.7	57.3	0	0.0	-41,424	0.0	-41,424	0.0	-41,424	0.0	-41,424	0.0
14	69.8	58.2	0	59.4	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	97.2	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	100.3	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	90.5	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	60.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	31.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	5.1	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	-234,442	0.0	-281,272	0.0	-281,272	0.0	-281,272	0.0	-281,272	0.0
22	59.6	57.3	-503,167	0.0	-719,185	0.0	-719,185	0.0	-719,185	0.0	-719,185	0.0
23	57.0	55.1	-730,027	0.0	-927,051	0.0	-927,051	0.0	-927,051	0.0	-927,051	0.0
24	54.5	52.7	-42,013	0.0	-1,150,034	0.0	-1,150,034	0.0	-1,150,034	0.0	-1,150,034	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

November		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0 49.2	-1,060,721	0.0	-1,140,395	0.0	-1,411,957	0.0	-1,411,957	0.0	-1,411,957	0.0
2	49.4 47.3	-1,193,887	0.0	-1,608,849	0.0	-1,608,849	0.0	-1,608,849	0.0	-1,608,849	0.0
3	47.2 45.3	-1,337,756	0.0	-1,806,170	0.0	-1,806,170	0.0	-1,806,170	0.0	-1,806,170	0.0
4	45.3 43.4	-1,432,248	0.0	-1,984,221	0.0	-1,984,221	0.0	-1,984,221	0.0	-1,984,221	0.0
5	43.9 42.2	-1,518,780	0.0	-2,101,276	0.0	-2,101,276	0.0	-2,101,276	0.0	-2,101,276	0.0
6	43.0 41.4	-1,492,428	0.0	-2,189,684	0.0	-2,189,684	0.0	-2,189,684	0.0	-2,189,684	0.0
7	42.7 41.2	-1,446,225	0.0	-2,268,003	0.0	-2,268,003	0.0	-2,268,003	0.0	-2,268,003	0.0
8	43.5 42.0	-1,256,493	0.0	-2,202,757	0.0	-2,202,757	0.0	-2,202,757	0.0	-2,202,757	0.0
9	45.9 44.0	-825,890	0.0	-1,954,539	0.0	-1,954,539	0.0	-1,954,539	0.0	-1,954,539	0.0
10	49.4 46.6	-357,673	0.0	-1,632,464	0.0	-1,632,464	0.0	-1,632,464	0.0	-1,632,464	0.0
11	53.8 48.6	0	0.0	-1,285,345	0.0	-1,285,345	0.0	-1,285,345	0.0	-1,285,345	0.0
12	58.4 50.6	0	0.0	-891,977	0.0	-891,977	0.0	-891,977	0.0	-891,977	0.0
13	62.8 52.6	0	0.0	-549,823	0.0	-549,823	0.0	-549,823	0.0	-549,823	0.0
14	66.3 54.5	0	7.9	-213,888	0.0	-213,888	0.0	-213,888	0.0	-213,888	0.0
15	68.7 55.7	0	86.3	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5 56.1	0	86.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2 55.8	0	72.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3 57.0	0	41.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9 59.4	0	13.8	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0 59.4	-191,792	0.0	-359,380	0.0	-359,380	0.0	-359,380	0.0	-359,380	0.0
21	62.8 58.2	-494,129	0.0	-526,708	0.0	-526,708	0.0	-526,708	0.0	-526,708	0.0
22	60.2 56.1	-771,217	0.0	-737,913	0.0	-737,913	0.0	-737,913	0.0	-737,913	0.0
23	57.5 54.0	-46,528	0.0	-971,562	0.0	-971,562	0.0	-971,562	0.0	-971,562	0.0
24	54.7 51.7	0	0.0	-1,185,183	0.0	-1,185,183	0.0	-1,185,183	0.0	-1,185,183	0.0

December		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9 42.5	-1,446,884	0.0	-2,047,238	0.0	-2,047,232	0.0	-2,047,232	0.0	-2,047,232	0.0
2	43.2 41.1	-1,587,027	0.0	-2,220,036	0.0	-2,220,036	0.0	-2,220,036	0.0	-2,220,036	0.0
3	41.8 39.8	-1,684,360	0.0	-2,337,064	0.0	-2,337,064	0.0	-2,337,064	0.0	-2,337,064	0.0
4	40.7 38.7	-1,765,085	0.0	-2,436,603	0.0	-2,436,603	0.0	-2,436,603	0.0	-2,436,603	0.0
5	40.1 38.4	-1,824,244	0.0	-2,506,197	0.0	-2,506,197	0.0	-2,506,197	0.0	-2,506,197	0.0
6	39.9 38.4	-1,830,477	0.0	-2,552,124	0.0	-2,552,124	0.0	-2,552,124	0.0	-2,552,124	0.0
7	40.5 39.0	-1,775,193	0.0	-2,555,615	0.0	-2,555,615	0.0	-2,555,615	0.0	-2,555,615	0.0
8	42.2 40.7	-1,666,032	0.0	-2,457,579	0.0	-2,457,579	0.0	-2,457,579	0.0	-2,457,579	0.0
9	44.9 43.4	-1,341,853	0.0	-2,203,107	0.0	-2,203,107	0.0	-2,203,107	0.0	-2,203,107	0.0
10	48.2 45.8	-953,174	0.0	-1,886,505	0.0	-1,886,505	0.0	-1,886,505	0.0	-1,886,505	0.0
11	51.7 48.3	-546,503	0.0	-1,550,241	0.0	-1,550,241	0.0	-1,550,241	0.0	-1,550,241	0.0
12	55.0 50.7	-181,619	0.0	-1,247,306	0.0	-1,247,306	0.0	-1,247,306	0.0	-1,247,306	0.0
13	57.7 52.0	0	0.0	-1,003,991	0.0	-1,003,991	0.0	-1,003,991	0.0	-1,003,991	0.0
14	59.5 52.6	0	0.0	-803,116	0.0	-803,116	0.0	-803,116	0.0	-803,116	0.0
15	60.1 52.7	0	0.0	-700,529	0.0	-700,529	0.0	-700,529	0.0	-700,529	0.0
16	59.9 52.6	0	0.0	-654,399	0.0	-654,399	0.0	-654,399	0.0	-654,399	0.0
17	59.2 52.1	0	0.0	-717,734	0.0	-717,734	0.0	-717,734	0.0	-717,734	0.0
18	58.2 51.8	0	0.0	-871,532	0.0	-871,532	0.0	-871,532	0.0	-871,532	0.0
19	56.8 52.2	0	0.0	-1,011,522	0.0	-1,011,522	0.0	-1,011,522	0.0	-1,011,522	0.0
20	55.0 51.4	0	0.0	-1,162,013	0.0	-1,162,013	0.0	-1,162,013	0.0	-1,162,013	0.0
21	53.1 50.1	-573,767	0.0	-1,333,655	0.0	-1,333,655	0.0	-1,333,655	0.0	-1,333,655	0.0
22	51.0 48.1	-994,502	0.0	-1,515,609	0.0	-1,515,609	0.0	-1,515,609	0.0	-1,515,609	0.0
23	48.9 46.2	-1,190,979	0.0	-1,692,719	0.0	-1,692,719	0.0	-1,692,719	0.0	-1,692,719	0.0
24	46.9 44.1	-1,328,549	0.0	-1,882,923	0.0	-1,882,923	0.0	-1,882,923	0.0	-1,882,923	0.0

01 Card - Job Information

Project: OLMSTEAD HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29805 (1 BLDG)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	YES

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	OFFICES

-----CARD 20-- General Room Parameters-----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	120	100	7	0		11.6	10		

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag		Average	Floor
1		50		CLGCONST				HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Roof	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Equal to Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Reflectance	Multiplier
1	1	120	12		196	0				
1	2	100	12		196	90				
1	3	120	12		196	180				
1	4	100	12		196	270				

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of	U-Value	Coefficient	Shading	Shading	Solar to	Transmittance	Visible
				Windows			Type	Type	Ret. Air		Reflectance
1	1			25	1.03	.82					
1	2			25	1.03	.82					
1	3			25	1.03	.82					
1	4			25	1.03	.82					

-----CARD 26-- Schedules -----

Room	People	Lights	Ventilation	Infiltration	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	Value	Value	Value	Value	Minimum	Fans	Fan	Fan	Exhaust	Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Percent	--- Daylighting ---
Number	Value	Units	Sensible	Latent	Value	Units	Fixture	Ballast	Lights to
							Type	Factor	Ret. Air
									Point 1
									Point 2
1	347	PEOPLE	255	255	2.0	WATT-SF	SUSFLUOR		

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISC OFF EQUIP	57000	BTUH	FGHEAT						

Room Number		Ventilation		Infiltration		Reheat Minimum	
		Cooling	Heating	Cooling	Heating		
		Value	Units	Value	Units	Value	Units
1		15	CFM-P	15	CFM-P	.08	CFM-SF

Room Number	Main				Auxiliary				Room Exhaust	
	Cooling		Heating		Cooling		Heating		Value	Units
1	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

Number	Description
1	FAN COIL UNITS

System		-----OPTIONAL VENTILATION SYSTEM-----					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBvh	SADBvh	Schedule	Schedule	Pressure
1	FC						

[illegible]

-----CARD 42--- Fan SP and Duct Parameters-----

System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path

1

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

FC FAN COIL

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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**                                     **  
**          T R A C E    6 0 0    A N A L Y S I S          **  
**                                     **  
**          by              **  
**                                     **  
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MORGAN HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29803

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 15:28:56 8/15/94
Dataset Name: FGTYPS16 .TM


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**          T R A C E    6 0 0    A N A L Y S I S          **  
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**          by              **  
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BURKHART HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29810 (1 BLDG)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 11:31:22 8/16/94
Dataset Name: FGTPS21 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)		Mo/Hr: 8/16		*	Mo/Hr: 6/18		*	Mo/Hr: 13/ 1		
Outside Air ==)		OADB/WB/HR: 96/ 76/105.0		*	OADB: 96		*	OADB: 23		
				*			*			
	Space	Ret. Air	Ret. Air	Net	Perct	Space	Perct	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	Sensible	Of Tot	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	(Btuh)	(%)	(Btuh)	(Btuh)	(%)
Envelope Loads										
Skylite Solr	0	0		0	0.00	0	0.00	0	0	0.00
Skylite Cond	0	0		0	0.00	0	0.00	0	0	0.00
Roof Cond	87,672	0		87,672	11.67	112,169	24.22	-72,523	-72,523	7.48
Glass Solar	96,800	0		96,800	12.89	77,440	16.72	0	0	0.00
Glass Cond	48,606	0		48,606	6.47	51,348	11.09	-122,636	-122,636	12.65
Wall Cond	160,288	0		160,288	21.34	183,730	39.67	-285,098	-285,098	29.41
Partition	0			0	0.00	0	0.00	0	0	0.00
Exposed Floor	0			0	0.00	0	0.00	0	0	0.00
Infiltration	63,614			63,614	8.47	38,484	8.31	-104,074	-104,074	10.74
Sub Total==)	456,980	0		456,980	60.84	463,170	100.00	-584,331	-584,331	60.29
Internal Loads										
Lights	0	0		0	0.00	0	0.00	0	0	0.00
People	0			0	0.00	0	0.00	0	0	0.00
Misc	0	0	0	0	0.00	0	0.00	0	0	0.00
Sub Total==)	0	0	0	0	0.00	0	0.00	0	0	0.00
Ceiling Load	0	0		0	0.00	0	0.00	0	0	0.00
Outside Air	0	0	0	294,092	39.16	0	0.00	0	-384,917	39.71
Sup. Fan Heat				0	0.00		0.00		0	0.00
Ret. Fan Heat		0		0	0.00		0.00		0	0.00
Duct Heat Pkup		0		0	0.00		0.00		0	0.00
OV/UNDR Sizing	0			0	0.00	0	0.00	0	0	0.00
Exhaust Heat		0	0	0	0.00		0.00		0	0.00
Terminal Bypass		0	0	0	-0.00		0.00		0	0.00
Grand Total==)	456,980	0	0	751,072	100.00	463,170	100.00	-584,331	-969,247	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	45,854
Main Clg	62.6	751.1	612.9	45,854	78.5	68.2	87.4	65.9	63.4	84.2	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	22,927
Totals	62.6	751.1									Wall	20,846
												2,420
												12

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	16.8	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	7,710	7,710	Clg Cfm/Sqft	1.00	SADB	65.9	79.5
Main Htg	-691.4	45,854	65.9	79.5	Infil	1,668	2,085	Clg Cfm/Ton	732.62	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	45,854	45,854	Clg Sqft/Ton	732.62	Return	75.0	68.0
Preheat	-277.9	45,854	60.4	65.9	Mincfm	0	0	Clg Btuh/Sqft	16.38	Ret/OA	78.5	60.4
Reheat	0.0	0	0.0	0.0	Return	45,854	45,854	No. People	514	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	7,710	7,710	Htg % OA	16.8	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0
Total	-969.2				Auxil	0	0	Htg Btuh/Sqft	-21.14	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-482,932	0.0	-607,775	0.0	-612,375	0.0	-612,394	0.0	-612,395	0.0
2	32.9	30.7	-485,014	0.0	-614,283	0.0	-617,949	0.0	-617,965	0.0	-617,965	0.0
3	33.1	31.3	-488,852	0.0	-608,847	0.0	-611,770	0.0	-611,783	0.0	-611,784	0.0
4	33.9	32.1	-491,173	0.0	-593,935	0.0	-596,266	0.0	-596,276	0.0	-596,276	0.0
5	35.2	33.5	-491,327	0.0	-571,343	0.0	-573,202	0.0	-573,210	0.0	-573,210	0.0
6	37.0	35.4	-477,776	0.0	-541,015	0.0	-542,497	0.0	-542,504	0.0	-542,504	0.0
7	39.0	37.6	-454,961	0.0	-508,981	0.0	-510,162	0.0	-510,167	0.0	-510,167	0.0
8	41.3	40.1	-418,692	0.0	-472,827	0.0	-473,769	0.0	-473,773	0.0	-473,773	0.0
9	43.7	42.5	-364,921	0.0	-435,158	0.0	-435,909	0.0	-435,912	0.0	-435,912	0.0
10	46.1	44.0	-299,332	0.0	-396,547	0.0	-397,146	0.0	-397,148	0.0	-397,148	0.0
11	48.4	45.0	-223,489	0.0	-358,014	0.0	-358,491	0.0	-358,493	0.0	-358,493	0.0
12	50.5	45.6	-149,515	0.0	-321,149	0.0	-321,528	0.0	-321,530	0.0	-321,530	0.0
13	52.2	46.1	-91,167	0.0	-289,845	0.0	-290,147	0.0	-290,149	0.0	-290,149	0.0
14	53.5	46.4	-48,941	0.0	-263,692	0.0	-263,933	0.0	-263,933	0.0	-263,933	0.0
15	54.3	46.3	-27,130	0.0	-245,357	0.0	-245,549	0.0	-245,549	0.0	-245,549	0.0
16	54.6	46.1	-27,370	0.0	-235,294	0.0	-235,446	0.0	-235,447	0.0	-235,447	0.0
17	54.0	45.9	-45,368	0.0	-242,395	0.0	-242,516	0.0	-242,517	0.0	-242,517	0.0
18	52.5	45.0	-84,266	0.0	-267,994	0.0	-268,090	0.0	-268,091	0.0	-268,091	0.0
19	50.1	44.8	-133,968	0.0	-311,760	0.0	-311,836	0.0	-311,837	0.0	-311,837	0.0
20	47.1	43.3	-185,574	0.0	-366,866	0.0	-366,928	0.0	-366,928	0.0	-366,928	0.0
21	43.7	40.4	-230,565	0.0	-429,804	0.0	-429,853	0.0	-429,854	0.0	-429,854	0.0
22	40.4	37.3	-273,530	0.0	-490,366	0.0	-490,405	0.0	-490,405	0.0	-490,405	0.0
23	37.3	34.9	-308,344	0.0	-546,431	0.0	-546,462	0.0	-546,462	0.0	-546,462	0.0
24	34.9	32.6	-336,441	0.0	-587,830	0.0	-587,854	0.0	-587,855	0.0	-587,855	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-346,662	0.0	-426,838	0.0	-475,239	0.0	-475,442	0.0	-475,443	0.0
2	39.7	37.1	-370,184	0.0	-474,497	0.0	-513,830	0.0	-513,992	0.0	-513,993	0.0
3	37.8	35.1	-391,438	0.0	-519,208	0.0	-549,951	0.0	-550,081	0.0	-550,081	0.0
4	36.3	33.8	-409,480	0.0	-552,914	0.0	-577,419	0.0	-577,521	0.0	-577,522	0.0
5	35.1	32.6	-419,402	0.0	-580,108	0.0	-599,640	0.0	-599,722	0.0	-599,722	0.0
6	34.4	32.0	-417,457	0.0	-597,184	0.0	-612,751	0.0	-612,817	0.0	-612,817	0.0
7	34.1	31.9	-404,259	0.0	-606,153	0.0	-618,562	0.0	-618,614	0.0	-618,614	0.0
8	34.6	32.4	-375,663	0.0	-599,222	0.0	-609,113	0.0	-609,154	0.0	-609,154	0.0
9	36.0	33.8	-332,170	0.0	-573,685	0.0	-581,569	0.0	-581,602	0.0	-581,602	0.0
10	38.2	34.7	-275,867	0.0	-532,375	0.0	-538,656	0.0	-538,683	0.0	-538,683	0.0
11	40.9	36.2	-210,815	0.0	-481,864	0.0	-486,864	0.0	-486,885	0.0	-486,885	0.0
12	43.9	37.4	-147,336	0.0	-425,116	0.0	-429,093	0.0	-429,110	0.0	-429,110	0.0
13	46.9	39.4	-94,929	0.0	-367,133	0.0	-370,295	0.0	-370,308	0.0	-370,308	0.0
14	49.7	41.4	-57,408	0.0	-311,634	0.0	-314,148	0.0	-314,158	0.0	-314,158	0.0
15	51.8	42.8	-35,621	0.0	-269,975	0.0	-271,975	0.0	-271,983	0.0	-271,983	0.0
16	53.2	43.9	-36,962	0.0	-242,224	0.0	-243,813	0.0	-243,819	0.0	-243,819	0.0
17	53.7	44.2	-51,315	0.0	-233,208	0.0	-234,469	0.0	-234,475	0.0	-234,475	0.0
18	53.4	44.4	-84,962	0.0	-239,816	0.0	-240,819	0.0	-240,824	0.0	-240,824	0.0
19	52.7	44.4	-127,151	0.0	-254,210	0.0	-255,008	0.0	-255,011	0.0	-255,011	0.0
20	51.5	45.2	-174,229	0.0	-279,574	0.0	-280,209	0.0	-280,211	0.0	-280,211	0.0
21	50.0	44.6	-213,191	0.0	-310,512	0.0	-311,018	0.0	-311,020	0.0	-311,020	0.0
22	48.1	43.3	-252,251	0.0	-349,427	0.0	-349,830	0.0	-349,831	0.0	-349,831	0.0
23	46.1	41.8	-285,099	0.0	-389,425	0.0	-389,746	0.0	-389,747	0.0	-389,747	0.0
24	43.9	40.1	-310,108	0.0	-432,353	0.0	-432,609	0.0	-432,610	0.0	-432,610	0.0

March			----- Design -----				----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	51.3	46.8	-162,927			0.0	-128,269			0.0	-266,373			0.0	-267,718			0.0
2	48.7	44.6	-181,775			0.0	-207,243			0.0	-317,177			0.0	-318,250			0.0
3	46.6	42.9	-197,983			0.0	-236,146		1.3		-356,931			0.0	-357,785			0.0
4	44.9	41.4	-214,451			0.0	-325,054			0.0	-388,505			0.0	-389,186			0.0
5	43.9	40.8	-220,220			0.0	-355,754			0.0	-406,331			0.0	-406,874			0.0
6	43.5	40.8	-213,589			0.0	-372,473			0.0	-412,790			0.0	-413,223			0.0
7	44.0	41.4	-194,368			0.0	-370,016			0.0	-402,159			0.0	-402,504			0.0
8	45.4	42.7	-155,275			0.0	-349,340			0.0	-374,970			0.0	-375,245			0.0
9	47.7	44.3	-97,363			0.0	-311,380			0.0	-331,810			0.0	-332,029			0.0
10	50.6	45.8	-26,370			0.0	-261,538			0.0	-277,816			0.0	-277,990			0.0
11	53.9	47.4	0			0.0	-202,062			0.0	-215,025			0.0	-215,164			0.0
12	57.4	49.0	0			0.0	-136,969			0.0	-147,288			0.0	-147,398			0.0
13	60.7	50.8	0			0.0	-74,824			0.0	-83,032			0.0	-83,121			0.0
14	63.6	52.7	0			0.0	-19,258			0.0	-25,786			0.0	-25,855			0.0
15	65.9	53.7	0		4.0		0		0.0		0		0.0		0		0.0	0.0
16	67.3	54.4	0		2.9		0		0.0		0		0.0		0		0.0	0.0
17	67.8	54.6	0		1.2		0		0.0		0		0.0		0		0.0	0.0
18	67.4	54.8	0		0.0		0		0.0		0		0.0		0		0.0	0.0
19	66.4	55.2	0		0.0		0		0.0		0		0.0		0		0.0	0.0
20	64.7	56.0	0		0.7		0		0.0		0		0.0		0		0.0	0.0
21	62.5	56.0	0		0.0		-33,498		0.0		-36,841		0.0		-36,877		0.0	0.0
22	60.0	54.1	0		0.0		-88,241		0.0		-90,904		0.0		-90,933		0.0	0.0
23	57.1	51.9	0		0.0		-148,975		0.0		-151,096		0.0		-151,119		0.0	0.0
24	54.2	49.4	0		0.0		-208,234		0.0		-209,924		0.0		-209,942		0.0	0.0

April			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	61.0	56.5	0	0.0		0	0	0.0		0	0	0.0		0	0	0.0		0	0	0.0		0
2	58.9	54.9	0	0.0		0	0	0.0		0	0	0.0		-5,975	0.0		-6,109	0.0		-6,109	0.0	
3	57.0	53.5	0	0.0		0	0	0.0		-61,505	0.0		-63,910	0.0		-63,910	0.0		-64,007	0.0		0.0
4	55.4	52.4	0	0.0		-62,083	0.0		-109,503	0.0		-111,422	0.0		-111,422	0.0		-111,499	0.0		-111,499	0.0
5	54.2	51.4	-7,693	0.0		-108,495	0.0		-146,325	0.0		-147,857	0.0		-147,857	0.0		-147,918	0.0		-147,918	0.0
6	53.5	50.9	0	0.0		-140,250	0.0		-170,436	0.0		-171,658	0.0		-171,658	0.0		-171,707	0.0		-171,707	0.0
7	53.2	51.1	0	0.0		-160,780	0.0		-184,870	0.0		-185,845	0.0		-185,845	0.0		-185,884	0.0		-185,884	0.0
8	53.9	51.5	0	0.0		-158,658	0.0		-177,879	0.0		-178,657	0.0		-178,657	0.0		-178,688	0.0		-178,688	0.0
9	55.9	52.1	0	0.0		-128,932	0.0		-144,260	0.0		-144,880	0.0		-144,880	0.0		-144,906	0.0		-144,906	0.0
10	58.9	53.2	0	0.0		-77,973	0.0		-90,190	0.0		-90,684	0.0		-90,684	0.0		-90,705	0.0		-90,705	0.0
11	62.6	55.2	0	0.0		-11,753	0.0		-21,473	0.0		-21,867	0.0		-21,867	0.0		-21,883	0.0		-21,883	0.0
12	66.5	57.3	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
13	70.2	59.6	0	7.6		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
14	73.2	61.0	0	8.3		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
15	75.2	62.2	0	8.1		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
16	75.9	62.2	0	19.4		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
17	75.6	62.0	0	29.2		0	2.5		0	2.6		0	2.6		0	2.6		0	2.6		0	2.6
18	74.9	61.7	0	27.2		0	1.7		0	1.8		0	1.8		0	1.8		0	1.8		0	1.8
19	73.7	62.0	0	23.2		0	0.6		0	0.6		0	0.6		0	0.6		0	0.6		0	0.6
20	72.1	62.4	0	18.9		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
21	70.2	63.3	0	14.3		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
22	68.0	62.5	0	9.4		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
23	65.7	60.5	0	5.6		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
24	63.4	58.5	0	1.5		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		0.0		0		0.4		0		0.5		0		0.5		0		0.5
2	65.7	61.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
3	63.6	59.7		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
4	61.8	58.4		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
7	59.4	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
8	60.1	56.3		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
9	62.4	56.3		0		6.2		0		0.0		0		0.0		0		0.0		0		0.0
10	65.7	57.2		0		13.5		0		0.0		0		0.0		0		0.0		0		0.0
11	69.9	58.9		0		19.7		0		0.0		0		0.0		0		0.0		0		0.0
12	74.3	60.9		0		26.5		0		1.7		0		1.7		0		1.7		0		1.7
13	78.5	63.7		0		32.5		0		4.5		0		4.5		0		4.5		0		4.5
14	81.9	65.3		0		38.2		0		6.6		0		6.6		0		6.6		0		6.6
15	84.1	66.9		0		41.7		0		7.7		0		7.7		0		7.7		0		7.7
16	84.9	67.1		0		42.7		0		7.9		0		7.9		0		7.9		0		7.9
17	84.6	67.3		0		43.1		0		7.2		0		7.2		0		7.2		0		7.2
18	83.8	67.1		0		41.0		0		19.5		0		19.5		0		19.5		0		19.5
19	82.4	67.5		0		37.4		0		21.5		0		21.5		0		21.5		0		21.5
20	80.6	68.9		0		32.6		0		20.3		0		20.3		0		20.3		0		20.3
21	78.5	71.0		0		27.9		0		20.8		0		20.8		0		20.8		0		20.8
22	76.1	69.9		0		23.3		0		16.7		0		16.7		0		16.7		0		16.7
23	73.4	68.0		0		18.6		0		10.6		0		10.6		0		10.6		0		10.6
24	70.8	65.5		0		15.2		0		5.3		0		5.3		0		5.3		0		5.3

June	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton		
1	74.7	70.1		0		31.2		0		16.3		0		19.1		0		19.1		
2	72.6	68.4		0		25.6		0		11.9		0		12.3		0		12.3		
3	70.9	67.3		0		22.9		0		8.0		0		8.1		0		8.1		
4	69.6	66.5		0		20.7		0		4.3		0		4.3		0		4.3		
5	68.7	65.8		0		18.2		0		0.0		0		0.0		0		0.0		
6	68.5	65.7		0		17.2		0		0.0		0		0.0		0		0.0		
7	69.0	66.3		0		19.5		0		0.0		0		0.0		0		0.0		
8	70.6	66.9		0		23.4		0		0.0		0		0.0		0		0.0		
9	73.0	67.7		0		28.0		0		1.1		0		1.1		0		1.1		
10	76.1	68.1		0		33.0		0		10.3		0		10.3		0		10.3		
11	79.5	69.1		0		38.8		0		16.1		0		16.1		0		16.1		
12	82.9	70.1		0		45.3		0		22.0		0		22.0		0		22.0		
13	86.0	71.0		0		51.0		0		28.3		0		28.3		0		28.3		
14	88.4	72.5		0		55.7		0		35.6		0		35.6		0		35.6		
15	90.0	74.0		0		59.3		0		41.6		0		41.6		0		41.6		
16	90.5	73.7		0		60.5		0		42.0		0		42.0		0		42.0		
17	90.3	74.2		0		60.7		0		43.7		0		43.7		0		43.7		
18	89.4	73.9		0		57.6		0		44.3		0		44.3		0		44.3		
19	88.1	74.5		0		53.7		0		43.5		0		43.5		0		43.5		
20	86.4	75.3		0		49.4		0		41.0		0		41.0		0		41.0		
21	84.3	76.5		0		47.3		0		42.0		0		42.0		0		42.0		
22	81.9	75.7		0		42.8		0		38.8		0		38.8		0		38.8		
23	79.5	74.0		0		38.7		0		32.5		0		32.5		0		32.5		
24	77.0	72.1		0		34.4		0		25.5		0		25.5		0		25.5		

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
July	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
Hour												
1	73.7	70.5	0	33.3	0	12.0	0	14.2	0	14.2	0	14.2
2	72.4	69.4	0	27.1	0	9.8	0	10.2	0	10.2	0	10.2
3	71.3	68.4	0	24.8	0	6.0	0	6.1	0	6.1	0	6.1
4	70.5	67.7	0	22.8	0	2.8	0	2.8	0	2.8	0	2.8
5	70.0	67.4	0	21.1	0	0.0	0	0.0	0	0.0	0	0.0
6	69.9	67.5	0	20.0	0	0.0	0	0.0	0	0.0	0	0.0
7	70.3	68.0	0	22.0	0	0.0	0	0.0	0	0.0	0	0.0
8	71.7	69.0	0	25.1	0	0.0	0	0.0	0	0.0	0	0.0
9	73.7	69.5	0	28.1	0	0.0	0	0.0	0	0.0	0	0.0
10	76.2	70.6	0	32.7	0	12.4	0	12.4	0	12.4	0	12.4
11	78.9	71.8	0	37.6	0	18.5	0	18.5	0	18.5	0	18.5
12	81.4	73.0	0	45.5	0	25.2	0	25.2	0	25.2	0	25.2
13	83.4	74.4	0	50.7	0	31.9	0	31.9	0	31.9	0	31.9
14	84.8	74.8	0	55.2	0	35.6	0	35.6	0	35.6	0	35.6
15	85.2	75.0	0	58.8	0	38.4	0	38.4	0	38.4	0	38.4
16	85.1	75.0	0	60.1	0	40.7	0	40.7	0	40.7	0	40.7
17	84.6	74.7	0	60.5	0	39.5	0	39.5	0	39.5	0	39.5
18	83.8	74.6	0	57.6	0	39.8	0	39.8	0	39.8	0	39.8
19	82.7	74.6	0	54.4	0	39.6	0	39.6	0	39.6	0	39.6
20	81.4	74.4	0	50.5	0	37.1	0	37.1	0	37.1	0	37.1
21	79.9	74.9	0	46.4	0	35.5	0	35.5	0	35.5	0	35.5
22	78.4	74.0	0	42.4	0	30.5	0	30.5	0	30.5	0	30.5
23	76.8	72.7	0	38.9	0	24.0	0	24.0	0	24.0	0	24.0
24	75.2	71.6	0	34.8	0	19.4	0	19.4	0	19.4	0	19.4

			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
August	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
Hour												
1	75.0	72.0	0	32.9	0	16.6	0	19.8	0	19.8	0	19.8
2	73.2	70.3	0	26.0	0	12.4	0	12.8	0	12.8	0	12.8
3	71.7	68.9	0	23.5	0	8.4	0	8.4	0	8.4	0	8.4
4	70.4	67.8	0	20.5	0	4.3	0	4.3	0	4.3	0	4.3
5	69.5	66.8	0	18.0	0	0.8	0	0.8	0	0.8	0	0.8
6	68.9	66.4	0	17.2	0	0.0	0	0.0	0	0.0	0	0.0
7	68.7	66.4	0	18.8	0	0.0	0	0.0	0	0.0	0	0.0
8	69.2	66.8	0	21.5	0	0.0	0	0.0	0	0.0	0	0.0
9	70.8	67.7	0	25.9	0	0.0	0	0.0	0	0.0	0	0.0
10	73.2	67.7	0	31.5	0	0.0	0	0.0	0	0.0	0	0.0
11	76.2	68.8	0	38.2	0	8.2	0	8.2	0	8.2	0	8.2
12	79.3	70.3	0	44.1	0	20.1	0	20.1	0	20.1	0	20.1
13	82.3	72.2	0	52.7	0	26.8	0	26.8	0	26.8	0	26.8
14	84.7	73.7	0	58.7	0	33.6	0	33.6	0	33.6	0	33.6
15	86.3	74.6	0	61.9	0	39.8	0	39.8	0	39.8	0	39.8
16	86.8	75.1	0	62.6	0	42.0	0	42.0	0	42.0	0	42.0
17	86.6	75.1	0	61.2	0	42.7	0	42.7	0	42.7	0	42.7
18	86.0	75.3	0	58.1	0	44.9	0	44.9	0	44.9	0	44.9
19	85.1	76.0	0	54.9	0	43.9	0	43.9	0	43.9	0	43.9
20	83.8	76.8	0	50.9	0	42.7	0	42.7	0	42.7	0	42.7
21	82.3	77.2	0	48.5	0	41.1	0	41.1	0	41.1	0	41.1
22	80.6	76.3	0	42.2	0	38.7	0	38.7	0	38.7	0	38.7
23	78.7	75.3	0	37.9	0	32.1	0	32.1	0	32.1	0	32.1
24	76.8	73.7	0	34.7	0	25.8	0	25.8	0	25.8	0	25.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	20.1	0	2.4	0	3.2	0	3.2	0	3.2
2	67.6	65.0	0	13.5	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	9.6	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	7.2	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	4.8	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	3.7	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	6.4	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	10.9	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	17.6	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	24.6	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	31.1	0	1.5	0	1.5	0	1.5	0	1.5
13	78.3	66.7	0	38.4	0	3.9	0	3.9	0	3.9	0	3.9
14	81.2	68.4	0	44.9	0	5.9	0	5.9	0	5.9	0	5.9
15	83.0	70.0	0	48.5	0	7.5	0	7.5	0	7.5	0	7.5
16	83.7	70.5	0	50.0	0	24.9	0	24.9	0	24.9	0	24.9
17	83.4	70.5	0	48.1	0	29.9	0	29.9	0	29.9	0	29.9
18	82.8	70.9	0	44.9	0	30.1	0	30.1	0	30.1	0	30.1
19	81.6	72.7	0	40.6	0	29.2	0	29.2	0	29.2	0	29.2
20	80.1	74.7	0	39.3	0	29.9	0	29.9	0	29.9	0	29.9
21	78.3	74.1	0	34.6	0	27.0	0	27.0	0	27.0	0	27.0
22	76.3	72.4	0	28.8	0	22.3	0	22.3	0	22.3	0	22.3
23	74.1	70.7	0	22.3	0	15.6	0	15.6	0	15.6	0	15.6
24	71.8	68.9	0	18.7	0	8.5	0	8.5	0	8.5	0	8.5

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-87,972	0.0	-212,088	0.0	-214,129	0.0	-214,165	0.0
2	50.1	48.6	0	0.0	-157,351	0.0	-256,419	0.0	-258,048	0.0	-258,076	0.0
3	48.4	46.9	-17,048	0.0	-211,203	0.0	-291,793	0.0	-293,093	0.0	-293,116	0.0
4	47.1	45.8	-58,531	0.0	-230,553	1.1	-318,971	0.0	-320,008	0.0	-320,026	0.0
5	46.3	44.8	-87,992	0.0	-286,319	0.0	-336,493	0.0	-337,322	0.0	-337,336	0.0
6	46.0	44.5	-97,630	0.0	-310,269	0.0	-345,114	0.0	-345,774	0.0	-345,786	0.0
7	46.8	45.3	-89,116	0.0	-304,880	0.0	-332,671	0.0	-333,198	0.0	-333,207	0.0
8	48.9	47.5	-60,485	0.0	-272,034	0.0	-294,205	0.0	-294,626	0.0	-294,633	0.0
9	52.2	49.9	-8,676	0.0	-215,044	0.0	-232,727	0.0	-233,062	0.0	-233,068	0.0
10	56.2	52.5	0	0.0	-144,568	0.0	-158,664	0.0	-158,931	0.0	-158,936	0.0
11	60.4	54.4	0	0.0	-69,020	0.0	-80,251	0.0	-80,463	0.0	-80,467	0.0
12	64.4	56.0	0	0.0	0	0.0	-4,546	0.0	-4,722	0.0	-4,726	0.0
13	67.7	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	5.1	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	12.3	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	18.3	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	13.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	-47,497	0.0	-51,509	0.0	-51,579	0.0	-51,581	0.0
23	57.0	55.1	0	0.0	-107,137	0.0	-110,339	0.0	-110,395	0.0	-110,396	0.0
24	54.5	52.7	0	0.0	-162,540	0.0	-165,097	0.0	-165,141	0.0	-165,142	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-139,249	0.0	-117,406	0.0	-243,012	0.0	-244,453	0.0	-244,472	0.0
2	49.4	47.3	-167,707	0.0	-193,680	0.0	-293,922	0.0	-295,072	0.0	-295,087	0.0
3	47.2	45.3	-193,601	0.0	-229,588	1.1	-336,458	0.0	-337,376	0.0	-337,388	0.0
4	45.3	43.4	-214,093	0.0	-307,885	0.0	-372,662	0.0	-373,395	0.0	-373,404	0.0
5	43.9	42.2	-225,038	0.0	-353,254	0.0	-398,761	0.0	-399,345	0.0	-399,353	0.0
6	43.0	41.4	-218,548	0.0	-379,139	0.0	-415,451	0.0	-415,917	0.0	-415,923	0.0
7	42.7	41.2	-199,042	0.0	-392,173	0.0	-421,146	0.0	-421,519	0.0	-421,523	0.0
8	43.5	42.0	-158,139	0.0	-382,848	0.0	-405,964	0.0	-406,261	0.0	-406,265	0.0
9	45.9	44.0	-93,608	0.0	-340,016	0.0	-358,458	0.0	-358,695	0.0	-358,698	0.0
10	49.4	46.6	-16,948	0.0	-274,838	0.0	-289,547	0.0	-289,736	0.0	-289,738	0.0
11	53.8	48.6	0	0.0	-192,241	0.0	-203,965	0.0	-204,116	0.0	-204,118	0.0
12	58.4	50.6	0	0.0	-106,313	0.0	-115,652	0.0	-115,772	0.0	-115,774	0.0
13	62.8	52.6	0	0.0	-24,154	0.0	-31,588	0.0	-31,684	0.0	-31,685	0.0
14	66.3	54.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	4.8	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.6	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	9.2	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	0.0	-10,293	0.0	-13,850	0.0	-13,896	0.0	-13,896	0.0
22	60.2	56.1	0	0.0	-70,690	0.0	-73,527	0.0	-73,564	0.0	-73,564	0.0
23	57.5	54.0	0	0.0	-130,026	0.0	-132,289	0.0	-132,319	0.0	-132,319	0.0
24	54.7	51.7	0	0.0	-188,745	0.0	-190,550	0.0	-190,574	0.0	-190,574	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-247,868	0.0	-357,389	0.0	-393,098	0.0	-393,253	0.0	-393,253	0.0
2	43.2	41.1	-267,247	0.0	-397,217	0.0	-425,690	0.0	-425,813	0.0	-425,814	0.0
3	41.8	39.8	-284,329	0.0	-429,840	0.0	-452,544	0.0	-452,643	0.0	-452,643	0.0
4	40.7	38.7	-298,917	0.0	-455,709	0.0	-473,815	0.0	-473,893	0.0	-473,894	0.0
5	40.1	38.4	-308,642	0.0	-469,303	0.0	-485,117	0.0	-485,180	0.0	-485,180	0.0
6	39.9	38.4	-303,163	0.0	-477,721	0.0	-489,239	0.0	-489,289	0.0	-489,289	0.0
7	40.5	39.0	-288,703	0.0	-469,269	0.0	-478,455	0.0	-478,494	0.0	-478,494	0.0
8	42.2	40.7	-258,716	0.0	-439,988	0.0	-447,311	0.0	-447,343	0.0	-447,344	0.0
9	44.9	43.4	-211,615	0.0	-391,316	0.0	-397,156	0.0	-397,181	0.0	-397,181	0.0
10	48.2	45.8	-154,350	0.0	-331,006	0.0	-335,659	0.0	-335,680	0.0	-335,680	0.0
11	51.7	48.3	-83,827	0.0	-267,011	0.0	-270,720	0.0	-270,736	0.0	-270,736	0.0
12	55.0	50.7	-16,717	0.0	-206,111	0.0	-209,066	0.0	-209,079	0.0	-209,079	0.0
13	57.7	52.0	0	0.0	-155,460	0.0	-157,813	0.0	-157,824	0.0	-157,824	0.0
14	59.5	52.6	0	0.0	-121,049	0.0	-122,923	0.0	-122,931	0.0	-122,931	0.0
15	60.1	52.7	0	0.0	-109,541	0.0	-111,033	0.0	-111,039	0.0	-111,039	0.0
16	59.9	52.6	0	0.0	-111,868	0.0	-113,055	0.0	-113,060	0.0	-113,060	0.0
17	59.2	52.1	0	0.0	-122,748	0.0	-123,693	0.0	-123,697	0.0	-123,697	0.0
18	58.2	51.8	0	0.0	-139,942	0.0	-140,696	0.0	-140,699	0.0	-140,699	0.0
19	56.8	52.2	0	0.0	-165,802	0.0	-166,402	0.0	-166,404	0.0	-166,404	0.0
20	55.0	51.4	-9,246	0.0	-199,935	0.0	-200,414	0.0	-200,416	0.0	-200,416	0.0
21	53.1	50.1	-63,119	0.0	-235,987	0.0	-236,369	0.0	-236,370	0.0	-236,370	0.0
22	51.0	48.1	-110,541	0.0	-276,462	0.0	-276,767	0.0	-276,768	0.0	-276,768	0.0
23	48.9	46.2	-149,562	0.0	-316,837	0.0	-317,080	0.0	-317,081	0.0	-317,081	0.0
24	46.9	44.1	-180,517	0.0	-354,748	0.0	-354,942	0.0	-354,943	0.0	-354,943	0.0

01 Card - Job Information

 Project: BURKHART HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29810 (1 BLDG)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	BURKHART HATLL

-----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	372.8	61.5	3	0		11.6	2		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	372.8	12		196	0			
1	2	61.5	12		196	90			
1	3	372.8	12		196	180			
1	4	61.5	12		196	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret.	Visible Transmittance	Inside Visible Reflectance
1	1	2.5	5.5	43	1.03	.83					
1	2	2.5	5.5	4	1.03	.83					
1	3	2.5	5.5	37	1.03	.83					
1	4	2.5	5.5	4	1.03	.83					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	257	PEOPLE	255	325	2.3	WATT-SF	SUSFLUOR				

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	54.1	KW	FGHEAT						

Room Number	Ventilation-----				Infiltration-----				--Reheat Minimum--	
	---Cooling---		---Heating---		---Cooling---		---Heating---		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	---Cooling---		---Heating---		---Cooling---		---Heating---		Value	Units
1	1	CFM-SF	1	CFM-SF						

Number	Description
1	MULTI ZONE SYSTEM

-----OPTIONAL VENTILATION SYSTEM-----							
System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	MZ						

[illegible]

-----CARD 42--- Fan SP and Duct Parameters-----

System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path

1

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

MZ MULTIZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHO FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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*****  
*****  
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**          T R A C E    6 0 0    A N A L Y S I S          **  
**  
**          by              **  
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SALTZMAN HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29811 (1 BLDG)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 11:44:19 8/16/94
Dataset Name: FGTYPS22 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****
Peaked at Time ==> Mo/Hr: 8/16 * Mo/Hr: 6/18 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 96/ 76/105.0 * OADB: 96 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	148,997	0		148,997	16.62	*	190,628	30.95	*	-123,251	-123,251	10.71
Glass Solar	128,982	0		128,982	14.39	*	104,414	16.95	*	0	0	0.00
Glass Cond	61,681	0		61,681	6.88	*	65,160	10.58	*	-155,626	-155,626	13.53
Wall Cond	181,181	0		181,181	20.21	*	213,315	34.63	*	-307,666	-307,666	26.74
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	63,685			63,685	7.10	*	42,379	6.88	*	-114,606	-114,606	9.96
Sub Total==>	584,526	0		584,526	65.19	*	615,897	100.00	*	-701,149	-701,149	60.94
Internal Loads												
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	312,099	34.81	*	0	0.00	*	0	-449,319	39.06
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	584,526	0	0	896,625	100.00	*	615,897	100.00	*	-701,149	-1,150,468	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	77,928
Main Clg	74.7	896.6	774.5	77,929	77.4	68.4	90.7	67.9	65.2	89.5	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	38,964
Totals	74.7	896.6									Wall	22,956
												3,071
												13

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	11.5	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F				Clg Cfm/Sqft	1.00	SADB	67.9	76.1
Main Htg	-711.9	77,929	67.9	76.1	Vent	9,000	9,000	Clg Cfm/Ton	1042.96	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Infil	1,836	2,296	Clg Sqft/Ton	1042.96	Return	75.0	68.0
Preheat	-438.6	77,929	62.8	67.9	Supply	77,929	77,929	Clg Btuh/Sqft	11.51	Ret/OA	77.4	62.8
Reheat	0.0	0	0.0	0.0	MinCFM	0	0	No. People	600	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Return	77,929	77,929	Htg % OA	11.5	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	9,000	9,000	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-1,150.5				Rm Exh	0	0	Htg Btuh/SqFt	-14.76	Fn Frict	0.0	0.0
					Auxil	0	0					

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-572,430	0.0	-701,411	0.0	-714,446	0.0	-714,520	0.0	-714,520	0.0
2	32.9	30.7	-573,516	0.0	-710,200	0.0	-720,713	0.0	-720,773	0.0	-720,774	0.0
3	33.1	31.3	-577,074	0.0	-705,063	0.0	-713,544	0.0	-713,593	0.0	-713,593	0.0
4	33.9	32.1	-579,177	0.0	-688,217	0.0	-695,060	0.0	-695,099	0.0	-695,100	0.0
5	35.2	33.5	-579,083	0.0	-661,900	0.0	-667,422	0.0	-667,453	0.0	-667,453	0.0
6	37.0	35.4	-563,153	0.0	-627,677	0.0	-632,131	0.0	-632,156	0.0	-632,156	0.0
7	39.0	37.6	-536,659	0.0	-591,775	0.0	-595,369	0.0	-595,389	0.0	-595,389	0.0
8	41.3	40.1	-493,909	0.0	-550,495	0.0	-553,394	0.0	-553,411	0.0	-553,411	0.0
9	43.7	42.5	-429,718	0.0	-507,501	0.0	-509,840	0.0	-509,853	0.0	-509,853	0.0
10	46.1	44.0	-351,933	0.0	-463,049	0.0	-464,935	0.0	-464,947	0.0	-464,947	0.0
11	48.4	45.0	-261,590	0.0	-418,217	0.0	-419,738	0.0	-419,747	0.0	-419,747	0.0
12	50.5	45.6	-172,414	0.0	-374,973	0.0	-376,199	0.0	-376,206	0.0	-376,206	0.0
13	52.2	46.1	-102,282	0.0	-337,955	0.0	-338,943	0.0	-338,948	0.0	-338,948	0.0
14	53.5	46.4	-50,660	0.0	-306,456	0.0	-307,253	0.0	-307,257	0.0	-307,257	0.0
15	54.3	46.3	-22,372	0.0	-284,324	0.0	-284,965	0.0	-284,969	0.0	-284,969	0.0
16	54.6	46.1	-20,810	0.0	-272,059	0.0	-272,576	0.0	-272,580	0.0	-272,580	0.0
17	54.0	45.9	-39,477	0.0	-280,288	0.0	-280,704	0.0	-280,706	0.0	-280,706	0.0
18	52.5	45.0	-82,265	0.0	-310,190	0.0	-310,526	0.0	-310,528	0.0	-310,528	0.0
19	50.1	44.8	-138,666	0.0	-361,591	0.0	-361,861	0.0	-361,863	0.0	-361,863	0.0
20	47.1	43.3	-198,068	0.0	-426,476	0.0	-426,694	0.0	-426,696	0.0	-426,696	0.0
21	43.7	40.4	-251,069	0.0	-499,948	0.0	-500,124	0.0	-500,125	0.0	-500,125	0.0
22	40.4	37.3	-302,194	0.0	-570,770	0.0	-570,912	0.0	-570,913	0.0	-570,913	0.0
23	37.3	34.9	-343,342	0.0	-637,116	0.0	-637,230	0.0	-637,231	0.0	-637,231	0.0
24	34.9	32.6	-377,800	0.0	-686,090	0.0	-686,181	0.0	-686,183	0.0	-686,183	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-398,696	0.0	-477,929	0.0	-548,082	0.0	-548,478	0.0	-548,480	0.0
2	39.7	37.1	-425,617	0.0	-537,035	0.0	-593,613	0.0	-593,933	0.0	-593,933	0.0
3	37.8	35.1	-449,856	0.0	-591,428	0.0	-637,059	0.0	-637,316	0.0	-637,317	0.0
4	36.3	33.8	-470,953	0.0	-634,163	0.0	-670,967	0.0	-671,175	0.0	-671,176	0.0
5	35.1	32.6	-483,683	0.0	-668,066	0.0	-697,751	0.0	-697,919	0.0	-697,919	0.0
6	34.4	32.0	-482,680	0.0	-689,104	0.0	-713,046	0.0	-713,182	0.0	-713,182	0.0
7	34.1	31.9	-468,709	0.0	-700,723	0.0	-720,035	0.0	-720,145	0.0	-720,145	0.0
8	34.6	32.4	-435,913	0.0	-693,585	0.0	-709,161	0.0	-709,249	0.0	-709,249	0.0
9	36.0	33.8	-384,448	0.0	-664,903	0.0	-677,466	0.0	-677,538	0.0	-677,538	0.0
10	38.2	34.7	-317,362	0.0	-617,067	0.0	-627,198	0.0	-627,254	0.0	-627,254	0.0
11	40.9	36.2	-239,612	0.0	-557,221	0.0	-565,385	0.0	-565,432	0.0	-565,432	0.0
12	43.9	37.4	-162,663	0.0	-489,911	0.0	-496,486	0.0	-496,524	0.0	-496,524	0.0
13	46.9	39.4	-98,518	0.0	-421,032	0.0	-426,327	0.0	-426,357	0.0	-426,357	0.0
14	49.7	41.4	-52,990	0.0	-354,916	0.0	-359,181	0.0	-359,204	0.0	-359,204	0.0
15	51.8	42.8	-25,065	0.0	-304,837	0.0	-308,271	0.0	-308,290	0.0	-308,290	0.0
16	53.2	43.9	-23,537	0.0	-271,578	0.0	-274,343	0.0	-274,358	0.0	-274,358	0.0
17	53.7	44.2	-37,469	0.0	-260,294	0.0	-262,519	0.0	-262,530	0.0	-262,530	0.0
18	53.4	44.4	-74,115	0.0	-267,414	0.0	-269,206	0.0	-269,216	0.0	-269,216	0.0
19	52.7	44.4	-121,513	0.0	-284,008	0.0	-285,452	0.0	-285,459	0.0	-285,459	0.0
20	51.5	45.2	-175,598	0.0	-313,294	0.0	-314,458	0.0	-314,464	0.0	-314,464	0.0
21	50.0	44.6	-220,945	0.0	-349,614	0.0	-350,553	0.0	-350,556	0.0	-350,556	0.0
22	48.1	43.3	-267,239	0.0	-395,752	0.0	-396,507	0.0	-396,511	0.0	-396,511	0.0
23	46.1	41.8	-306,835	0.0	-444,087	0.0	-444,696	0.0	-444,699	0.0	-444,699	0.0
24	43.9	40.1	-337,738	0.0	-496,588	0.0	-497,079	0.0	-497,081	0.0	-497,081	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

March		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	51.3	46.8	-177,224	0.0		-21,839	0.0			-280,463	0.0			-285,360	0.0			-285,447	0.0		
2	48.7	44.6	-198,308	0.0		-135,144	0.0			-343,509	0.0			-347,458	0.0			-347,529	0.0		
3	46.6	42.9	-216,294	0.0		-224,955	0.0			-392,983	0.0			-396,166	0.0			-396,224	0.0		
4	44.9	41.4	-236,007	0.0		-296,921	0.0			-432,443	0.0			-435,010	0.0			-435,057	0.0		
5	43.9	40.8	-243,450	0.0		-346,113	0.0			-455,425	0.0			-457,497	0.0			-457,534	0.0		
6	43.5	40.8	-235,886	0.0		-377,445	0.0			-465,622	0.0			-467,292	0.0			-467,322	0.0		
7	44.0	41.4	-214,026	0.0		-384,611	0.0			-456,193	0.0			-457,540	0.0			-457,565	0.0		
8	45.4	42.7	-168,688	0.0		-368,625	0.0			-426,011	0.0			-427,098	0.0			-427,118	0.0		
9	47.7	44.3	-100,636	0.0		-329,549	0.0			-375,836	0.0			-376,714	0.0			-376,729	0.0		
10	50.6	45.8	-16,762	0.0		-275,405	0.0			-312,727	0.0			-313,435	0.0			-313,447	0.0		
11	53.9	47.4	0	0.0		-208,764	0.0			-238,847	0.0			-239,417	0.0			-239,427	0.0		
12	57.4	49.0	0	0.0		-133,684	0.0			-157,927	0.0			-158,387	0.0			-158,394	0.0		
13	60.7	50.8	0	0.0		-60,764	0.0			-80,293	0.0			-80,663	0.0			-80,669	0.0		
14	63.6	52.7	0	0.0		0	0.0			-10,877	0.0			-11,175	0.0			-11,181	0.0		
15	65.9	53.7	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
16	67.3	54.4	0	4.0		0	0.0			0	0.0			0	0.0			0	0.0		
17	67.8	54.6	0	2.0		0	0.0			0	0.0			0	0.0			0	0.0		
18	67.4	54.8	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
19	66.4	55.2	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
20	64.7	56.0	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
21	62.5	56.0	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
22	60.0	54.1	0	0.0		-57,019	0.0			-66,365	0.0			-66,533	0.0			-66,535	0.0		
23	57.1	51.9	0	0.0		-133,902	0.0			-141,435	0.0			-141,571	0.0			-141,572	0.0		
24	54.2	49.4	0	0.0		-208,178	0.0			-214,252	0.0			-214,360	0.0			-214,362	0.0		

April		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	61.0	56.5	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
2	58.9	54.9	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
3	57.0	53.5	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
4	55.4	52.4	0	0.0		0	0.0			-15,905	0.0			-25,057	0.0			-25,947	0.0		
5	54.2	51.4	0	0.0		0	0.0			-77,412	0.0			-84,808	0.0			-85,535	0.0		
6	53.5	50.9	0	0.0		-37,115	0.0			-120,905	0.0			-126,875	0.0			-127,462	0.0		
7	53.2	51.1	0	0.0		-82,684	0.0			-150,372	0.0			-155,190	0.0			-155,664	0.0		
8	53.9	51.5	0	0.0		-97,597	0.0			-152,230	0.0			-156,119	0.0			-156,500	0.0		
9	55.9	52.1	0	0.0		-76,661	0.0			-120,740	0.0			-123,877	0.0			-124,187	0.0		
10	58.9	53.2	0	0.0		-27,761	0.0			-63,312	0.0			-65,842	0.0			-66,091	0.0		
11	62.6	55.2	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
12	66.5	57.3	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
13	70.2	59.6	0	9.3		0	0.0			0	0.0			0	0.0			0	0.0		
14	73.2	61.0	0	10.3		0	0.0			0	0.0			0	0.0			0	0.0		
15	75.2	62.2	0	10.1		0	0.0			0	0.0			0	0.0			0	0.0		
16	75.9	62.2	0	9.0		0	0.0			0	0.0			0	0.0			0	0.0		
17	75.6	62.0	0	19.7		0	3.1			0	0.0			0	0.0			0	0.0		
18	74.9	61.7	0	37.1		0	2.2			0	2.4			0	2.4			0	2.4		
19	73.7	62.0	0	32.2		0	0.9			0	1.1			0	1.1			0	1.1		
20	72.1	62.4	0	26.7		0	0.0			0	0.0			0	0.0			0	0.0		
21	70.2	63.3	0	20.8		0	0.0			0	0.0			0	0.0			0	0.0		
22	68.0	62.5	0	14.5		0	0.0			0	0.0			0	0.0			0	0.0		
23	65.7	60.5	0	8.7		0	0.0			0	0.0			0	0.0			0	0.0		
24	63.4	58.5	0	4.3		0	0.0			0	0.0			0	0.0			0	0.0		

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		0.0		0		2.4		0		2.9		0		2.9		0		2.9
2	65.7	61.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
3	63.6	59.7		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
4	61.8	58.4		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
7	59.4	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
8	60.1	56.3		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
9	62.4	56.3		0		1.5		0		0.0		0		0.0		0		0.0		0		0.0
10	65.7	57.2		0		12.6		0		0.0		0		0.0		0		0.0		0		0.0
11	69.9	58.9		0		25.4		0		0.0		0		0.0		0		0.0		0		0.0
12	74.3	60.9		0		34.6		0		1.2		0		1.2		0		1.2		0		1.2
13	78.5	63.7		0		42.0		0		4.5		0		4.5		0		4.5		0		4.5
14	81.9	65.3		0		48.4		0		7.1		0		7.1		0		7.1		0		7.1
15	84.1	66.9		0		53.2		0		8.5		0		8.5		0		8.5		0		8.5
16	84.9	67.1		0		55.0		0		8.8		0		8.8		0		8.8		0		8.8
17	84.6	67.3		0		56.0		0		14.1		0		14.1		0		14.1		0		14.1
18	83.8	67.1		0		53.7		0		29.7		0		29.7		0		29.7		0		29.7
19	82.4	67.5		0		50.3		0		28.3		0		28.3		0		28.3		0		28.3
20	80.6	68.9		0		43.3		0		24.8		0		24.8		0		24.8		0		24.8
21	78.5	71.0		0		37.3		0		24.8		0		24.8		0		24.8		0		24.8
22	76.1	69.9		0		31.3		0		21.2		0		21.2		0		21.2		0		21.2
23	73.4	68.0		0		25.3		0		14.5		0		14.5		0		14.5		0		14.5
24	70.8	65.5		0		20.8		0		8.4		0		8.4		0		8.4		0		8.4

June	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton		
1	74.7	70.1		0		38.2		0		18.9		0		23.0		0		23.0		
2	72.6	68.4		0		32.3		0		15.2		0		16.2		0		16.2		
3	70.9	67.3		0		27.3		0		9.6		0		9.9		0		9.9		
4	69.6	66.5		0		24.2		0		5.4		0		5.5		0		5.5		
5	68.7	65.8		0		21.9		0		1.8		0		1.9		0		1.9		
6	68.5	65.7		0		20.5		0		0.0		0		0.0		0		0.0		
7	69.0	66.3		0		22.7		0		0.0		0		0.0		0		0.0		
8	70.6	66.9		0		27.3		0		0.0		0		0.0		0		0.0		
9	73.0	67.7		0		32.1		0		2.4		0		2.4		0		2.4		
10	76.1	68.1		0		39.3		0		13.1		0		13.2		0		13.2		
11	79.5	69.1		0		47.2		0		20.0		0		20.0		0		20.0		
12	82.9	70.1		0		55.2		0		27.0		0		27.0		0		27.0		
13	86.0	71.0		0		62.3		0		34.4		0		34.4		0		34.4		
14	88.4	72.5		0		67.3		0		42.7		0		42.7		0		42.7		
15	90.0	74.0		0		72.1		0		49.9		0		49.9		0		49.9		
16	90.5	73.7		0		74.7		0		51.4		0		51.4		0		51.4		
17	90.3	74.2		0		74.7		0		53.4		0		53.4		0		53.4		
18	89.4	73.9		0		73.3		0		54.2		0		54.2		0		54.2		
19	88.1	74.5		0		69.0		0		53.3		0		53.3		0		53.3		
20	86.4	75.3		0		62.6		0		50.1		0		50.1		0		50.1		
21	84.3	76.5		0		57.9		0		50.9		0		50.9		0		50.9		
22	81.9	75.7		0		52.3		0		47.3		0		47.3		0		47.3		
23	79.5	74.0		0		47.2		0		40.1		0		40.1		0		40.1		
24	77.0	72.1		0		41.8		0		31.8		0		31.8		0		31.8		

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

July Hour	----- Design -----				----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----				
	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5	0		41.4		0		15.3		0		18.5		0		18.5	
2	72.4	69.4	0		33.6		0		12.7		0		13.8		0		13.8	
3	71.3	68.4	0		28.9		0		7.3		0		7.6		0		7.6	
4	70.5	67.7	0		26.1		0		3.7		0		3.8		0		3.8	
5	70.0	67.4	0		24.0		0		0.4		0		0.4		0		0.4	
6	69.9	67.5	0		22.5		0		0.0		0		0.0		0		0.0	
7	70.3	68.0	0		24.6		0		0.0		0		0.0		0		0.0	
8	71.7	69.0	0		28.4		0		0.0		0		0.0		0		0.0	
9	73.7	69.5	0		33.5		0		2.9		0		2.9		0		2.9	
10	76.2	70.6	0		39.1		0		16.2		0		16.2		0		16.2	
11	78.9	71.8	0		45.1		0		23.5		0		23.5		0		23.5	
12	81.4	73.0	0		54.3		0		31.2		0		31.2		0		31.2	
13	83.4	74.4	0		61.8		0		39.1		0		39.1		0		39.1	
14	84.8	74.8	0		66.7		0		43.7		0		43.7		0		43.7	
15	85.2	75.0	0		71.5		0		47.3		0		47.3		0		47.3	
16	85.1	75.0	0		73.7		0		49.1		0		49.1		0		49.1	
17	84.6	74.7	0		74.5		0		49.1		0		49.1		0		49.1	
18	83.8	74.6	0		71.7		0		49.4		0		49.4		0		49.4	
19	82.7	74.6	0		67.4		0		49.0		0		49.0		0		49.0	
20	81.4	74.4	0		62.4		0		46.1		0		46.1		0		46.1	
21	79.9	74.9	0		57.2		0		43.9		0		43.9		0		43.9	
22	78.4	74.0	0		52.0		0		38.1		0		38.1		0		38.1	
23	76.8	72.7	0		47.4		0		30.3		0		30.3		0		30.3	
24	75.2	71.6	0		42.2		0		24.7		0		24.7		0		24.7	

August			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	75.0	72.0		0	41.8		0	19.2		0	23.9		0	23.9		0	23.9
2	73.2	70.3		0	33.3		0	15.7		0	17.0		0	17.0		0	17.0
3	71.7	68.9		0	27.8		0	9.9		0	10.2		0	10.2		0	10.2
4	70.4	67.8		0	24.7		0	5.3		0	5.4		0	5.4		0	5.4
5	69.5	66.8		0	21.7		0	1.3		0	1.3		0	1.3		0	1.3
6	68.9	66.4		0	20.5		0	0.0		0	0.0		0	0.0		0	0.0
7	68.7	66.4		0	21.0		0	0.0		0	0.0		0	0.0		0	0.0
8	69.2	66.8		0	24.2		0	0.0		0	0.0		0	0.0		0	0.0
9	70.8	67.7		0	30.5		0	0.0		0	0.0		0	0.0		0	0.0
10	73.2	67.7		0	37.5		0	0.0		0	0.0		0	0.0		0	0.0
11	76.2	68.8		0	45.6		0	14.2		0	14.2		0	14.2		0	14.2
12	79.3	70.3		0	53.8		0	24.9		0	24.9		0	24.9		0	24.9
13	82.3	72.2		0	62.6		0	32.9		0	32.9		0	32.9		0	32.9
14	84.7	73.7		0	70.5		0	40.9		0	40.9		0	40.9		0	40.9
15	86.3	74.6		0	74.1		0	47.3		0	47.3		0	47.3		0	47.3
16	86.8	75.1		0	74.7		0	51.7		0	51.7		0	51.7		0	51.7
17	86.6	75.1		0	74.7		0	52.6		0	52.6		0	52.6		0	52.6
18	86.0	75.3		0	74.7		0	55.2		0	55.2		0	55.2		0	55.2
19	85.1	76.0		0	69.2		0	54.1		0	54.1		0	54.1		0	54.1
20	83.8	76.8		0	62.5		0	52.4		0	52.4		0	52.4		0	52.4
21	82.3	77.2		0	59.0		0	50.2		0	50.2		0	50.2		0	50.2
22	80.6	76.3		0	51.7		0	45.9		0	45.9		0	45.9		0	45.9
23	78.7	75.3		0	46.2		0	38.5		0	38.5		0	38.5		0	38.5
24	76.8	73.7		0	40.9		0	31.0		0	31.0		0	31.0		0	31.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

September			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	69.6	67.4		0		24.6		0		3.3		0		4.5		0		4.5		0		4.5
2	67.6	65.0		0		16.7		0		0.0		0		0.0		0		0.0		0		0.0
3	65.8	63.4		0		11.9		0		0.0		0		0.0		0		0.0		0		0.0
4	64.3	62.2		0		8.0		0		0.0		0		0.0		0		0.0		0		0.0
5	63.1	61.1		0		5.8		0		0.0		0		0.0		0		0.0		0		0.0
6	62.4	60.3		0		4.5		0		0.0		0		0.0		0		0.0		0		0.0
7	62.2	60.2		0		4.2		0		0.0		0		0.0		0		0.0		0		0.0
8	62.9	60.9		0		7.5		0		0.0		0		0.0		0		0.0		0		0.0
9	64.7	61.8		0		12.5		0		0.0		0		0.0		0		0.0		0		0.0
10	67.6	62.1		0		20.0		0		0.0		0		0.0		0		0.0		0		0.0
11	71.1	63.1		0		28.9		0		0.0		0		0.0		0		0.0		0		0.0
12	74.8	64.6		0		37.1		0		1.2		0		1.2		0		1.2		0		1.2
13	78.3	66.7		0		46.2		0		3.9		0		3.9		0		3.9		0		3.9
14	81.2	68.4		0		53.4		0		6.1		0		6.1		0		6.1		0		6.1
15	83.0	70.0		0		58.5		0		7.7		0		7.7		0		7.7		0		7.7
16	83.7	70.5		0		60.8		0		28.6		0		28.6		0		28.6		0		28.6
17	83.4	70.5		0		58.8		0		34.7		0		34.8		0		34.8		0		34.8
18	82.8	70.9		0		54.9		0		36.0		0		36.0		0		36.0		0		36.0
19	81.6	72.7		0		50.3		0		34.6		0		34.6		0		34.6		0		34.6
20	80.1	74.7		0		46.9		0		35.0		0		35.0		0		35.0		0		35.0
21	78.3	74.1		0		41.3		0		32.0		0		32.0		0		32.0		0		32.0
22	76.3	72.4		0		34.9		0		26.9		0		26.9		0		26.9		0		26.9
23	74.1	70.7		0		27.6		0		19.1		0		19.1		0		19.1		0		19.1
24	71.8	68.9		0		22.2		0		10.8		0		10.8		0		10.8		0		10.8

October			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	52.2	50.5		0		0.0		0		0.0	-213,735		0.0	-222,321		0.0		0.0	-222,578		0.0	
2	50.1	48.6		0		0.0		-38,030		0.0	-270,360		0.0	-277,291		0.0		0.0	-277,499		0.0	
3	48.4	46.9		0		0.0		-128,077		0.0	-315,757		0.0	-321,354		0.0		0.0	-321,521		0.0	
4	47.1	45.8		0		0.0		-199,522		0.0	-351,037		0.0	-355,555		0.0		0.0	-355,690		0.0	
5	46.3	44.8		0		0.0		-252,196		0.0	-374,497		0.0	-378,144		0.0		0.0	-378,253		0.0	
6	46.0	44.5		0		0.0		-288,521		0.0	-387,221		0.0	-390,163		0.0		0.0	-390,252		0.0	
7	46.8	45.3	-4,038		0.0			-294,554		0.0	-374,197		0.0	-376,573		0.0		0.0	-376,644		0.0	
8	48.9	47.5		0		0.0		-266,782		0.0	-331,053		0.0	-332,970		0.0		0.0	-333,027		0.0	
9	52.2	49.9		0		0.0		-208,467		0.0	-260,326		0.0	-261,872		0.0		0.0	-261,919		0.0	
10	56.2	52.5		0		0.0		-131,812		0.0	-173,641		0.0	-174,889		0.0		0.0	-174,926		0.0	
11	60.4	54.4		0		0.0		-47,872		0.0	-81,600		0.0	-82,606		0.0		0.0	-82,636		0.0	
12	64.4	56.0		0		0.0		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
13	67.7	57.3		0		0.0		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
14	69.8	58.2		0		6.2		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
15	70.6	58.1		0		6.2		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
16	70.3	57.5		0		5.0		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
17	69.5	57.3		0		3.0		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
18	68.2	57.7		0		0.0		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
19	66.5	60.6		0		17.8		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
20	64.4	60.8		0		11.1		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
21	62.1	59.4		0		4.3		0		0.0	0		0.0	0		0.0		0.0	0		0.0	
22	59.6	57.3		0		0.0		0		0.0	-16,679		0.0	-17,167		0.0		0.0	-17,183		0.0	
23	57.0	55.1		0		0.0		-78,757		0.0	-91,930		0.0	-92,324		0.0		0.0	-92,336		0.0	
24	54.5	52.7		0		0.0		-150,192		0.0	-160,827		0.0	-161,145		0.0		0.0	-161,156		0.0	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-133,381	0.0	-29,744	0.0	-268,621	0.0	-273,764	0.0	-273,876	0.0
2	49.4	47.3	-170,257	0.0	-138,009	0.0	-330,907	0.0	-335,059	0.0	-335,149	0.0
3	47.2	45.3	-203,859	0.0	-226,460	0.0	-382,161	0.0	-385,511	0.0	-385,585	0.0
4	45.3	43.4	-230,894	0.0	-300,097	0.0	-425,767	0.0	-428,471	0.0	-428,530	0.0
5	43.9	42.2	-246,475	0.0	-355,944	0.0	-457,377	0.0	-459,559	0.0	-459,607	0.0
6	43.0	41.4	-241,389	0.0	-395,991	0.0	-477,861	0.0	-479,623	0.0	-479,661	0.0
7	42.7	41.2	-221,018	0.0	-419,325	0.0	-485,403	0.0	-486,825	0.0	-486,857	0.0
8	43.5	42.0	-174,545	0.0	-414,222	0.0	-467,553	0.0	-468,701	0.0	-468,726	0.0
9	45.9	44.0	-99,694	0.0	-369,158	0.0	-412,197	0.0	-413,123	0.0	-413,143	0.0
10	49.4	46.6	-9,952	0.0	-296,646	0.0	-331,376	0.0	-332,123	0.0	-332,139	0.0
11	53.8	48.6	0	0.0	-201,999	0.0	-230,008	0.0	-230,612	0.0	-230,624	0.0
12	58.4	50.6	0	0.0	-102,984	0.0	-125,566	0.0	-126,053	0.0	-126,064	0.0
13	62.8	52.6	0	0.0	-8,825	0.0	-26,948	0.0	-27,341	0.0	-27,349	0.0
14	66.3	54.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	5.2	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	0.0	-54,948	0.0	-64,730	0.0	-64,941	0.0	-64,944	0.0
23	57.5	54.0	0	0.0	-129,073	0.0	-136,966	0.0	-137,137	0.0	-137,141	0.0
24	54.7	51.7	0	0.0	-201,786	0.0	-208,158	0.0	-208,296	0.0	-208,298	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-277,722	0.0	-400,451	0.0	-456,924	0.0	-457,248	0.0	-457,250	0.0
2	43.2	41.1	-302,455	0.0	-450,235	0.0	-495,796	0.0	-496,057	0.0	-496,059	0.0
3	41.8	39.8	-324,450	0.0	-490,405	0.0	-527,159	0.0	-527,370	0.0	-527,372	0.0
4	40.7	38.7	-342,753	0.0	-522,445	0.0	-552,101	0.0	-552,270	0.0	-552,272	0.0
5	40.1	38.4	-355,426	0.0	-542,268	0.0	-566,197	0.0	-566,333	0.0	-566,334	0.0
6	39.9	38.4	-350,270	0.0	-552,586	0.0	-571,894	0.0	-572,004	0.0	-572,005	0.0
7	40.5	39.0	-333,947	0.0	-544,525	0.0	-560,103	0.0	-560,192	0.0	-560,193	0.0
8	42.2	40.7	-299,601	0.0	-511,125	0.0	-523,693	0.0	-523,765	0.0	-523,765	0.0
9	44.9	43.4	-245,655	0.0	-454,740	0.0	-464,879	0.0	-464,937	0.0	-464,937	0.0
10	48.2	45.8	-178,177	0.0	-384,420	0.0	-392,599	0.0	-392,645	0.0	-392,645	0.0
11	51.7	48.3	-93,738	0.0	-308,819	0.0	-315,413	0.0	-315,450	0.0	-315,450	0.0
12	55.0	50.7	-13,139	0.0	-236,821	0.0	-242,137	0.0	-242,167	0.0	-242,167	0.0
13	57.7	52.0	0	0.0	-177,571	0.0	-181,857	0.0	-181,880	0.0	-181,880	0.0
14	59.5	52.6	0	0.0	-137,741	0.0	-141,196	0.0	-141,216	0.0	-141,216	0.0
15	60.1	52.7	0	0.0	-124,241	0.0	-127,025	0.0	-127,042	0.0	-127,042	0.0
16	59.9	52.6	0	0.0	-126,369	0.0	-128,613	0.0	-128,626	0.0	-128,626	0.0
17	59.2	52.1	0	0.0	-138,173	0.0	-139,981	0.0	-139,992	0.0	-139,992	0.0
18	58.2	51.8	0	0.0	-157,602	0.0	-159,060	0.0	-159,068	0.0	-159,068	0.0
19	56.8	52.2	0	0.0	-187,604	0.0	-188,780	0.0	-188,787	0.0	-188,787	0.0
20	55.0	51.4	0	0.0	-227,666	0.0	-228,614	0.0	-228,619	0.0	-228,619	0.0
21	53.1	50.1	-39,272	0.0	-270,230	0.0	-270,996	0.0	-271,000	0.0	-271,000	0.0
22	51.0	48.1	-98,505	0.0	-318,237	0.0	-318,853	0.0	-318,858	0.0	-318,858	0.0
23	48.9	46.2	-147,714	0.0	-366,222	0.0	-366,720	0.0	-366,724	0.0	-366,724	0.0
24	46.9	44.1	-187,297	0.0	-411,279	0.0	-411,681	0.0	-411,684	0.0	-411,684	0.0

01 Card - Job Information

 Project: SALTZMAN HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29811 (1 BLDG)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	SCHOOL_OFFS

-----CARD 20-- General Room Parameters-----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	315.5	123.5	3	0		11.6	2		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	202.75	12		196	0			
1	2	61.5	12		196	90			
1	3	202.75	12		196	180			
1	4	61.5	12		196	270			
1	5	55	12		196	0			
1	6	52	12		196	90			
1	7	55	12		196	180			
1	8	52	12		196	270			
1	9	55	12		196	0			
1	10	52	12		196	90			
1	11	55	12		196	180			
1	12	52	12		196	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	2.5	5.5	30	1.03	.82					
1	2	2.5	5.5	4	1.03	.82					
1	3	2.5	5.5	30	1.03	.82					
1	4	2.5	5.5	2	1.03	.82					
1	5	11.5	10	1	1.03	.82					
1	6	4.2	10	1	1.03	.82					
1	7	11.5	10	1	1.03	.82					
1	8	4.2	10	1	1.03	.82					
1	9	11.5	10	1	1.03	.82					
1	10	4.2	10	1	1.03	.82					
1	11	11.5	10	1	1.03	.82					
1	12	4.2	10	1	1.03	.82					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	300	PEOPLE	255	325	2.3	WATT-SF	SUSFLUOR				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	411	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----		-----Heating-----		-----Cooling-----		-----Heating-----		--Reheat Minimum--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	----Cooling----		----Heating----		----Cooling----		----Heating----		Value	Units
1	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	MULTI ZONE SYSTEM

-----CARD 40--- System Type -----

System Set Number	System Type	-----OPTIONAL VENTILATION SYSTEM-----					
		Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	MZ						

System

[illegible][illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

MZ MULTIZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHO FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 72
24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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*****  
*****  
**                                     **  
**          T R A C E    6 0 0    A N A L Y S I S          **  
**                                     **  
**          by                **  
**                                     **  
*****  
*****
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GREENY HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29809 (1 BLDG)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 16:32:21 8/15/94
Dataset Name: FGTPS20 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)					Mo/Hr: 8/16	*	Mo/Hr: 6/18	*	Mo/Hr: 13/ 1			
Outside Air ==)					OADB/WB/HR: 96/ 76/105.0	*	OADB: 96	*	OADB: 23			
	Space	Ret. Air	Ret. Air	Net	Perct	*	Space	Perct	*	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	148,997	0		148,997	16.62	*	190,628	30.95	*	-123,251	-123,251	10.71
Glass Solar	128,982	0		128,982	14.39	*	104,414	16.95	*	0	0	0.00
Glass Cond	61,681	0		61,681	6.88	*	65,160	10.58	*	-155,626	-155,626	13.53
Wall Cond	181,181	0		181,181	20.21	*	213,315	34.63	*	-307,666	-307,666	26.74
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	63,685			63,685	7.10	*	42,379	6.88	*	-114,606	-114,606	9.96
Sub Total==)	584,526	0		584,526	65.19	*	615,897	100.00	*	-701,149	-701,149	60.94
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	312,099	34.81	*	0	0.00	*	0	-449,319	39.06
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==)	584,526	0	0	896,625	100.00	*	615,897	100.00	*	-701,149	-1,150,468	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Floor		
Main Clg	74.7	896.6	774.5	77,929	77.4	68.4	90.7	67.9	65.2	89.5	77,928	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	
Totals	74.7	896.6										
										Part	0	
										ExFlr	0	
										Roof	38,964	0 0
										Wall	22,956	3,071 13

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA		Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent			Clg Cfm/Sqft	11.5	SAOB	67.9	76.1
Main Htg	-711.9	77,929	67.9	76.1	Infil	1,836	2,296	Clg Cfm/Ton	1042.96	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	77,929	77,929	Clg Sqft/Ton	1042.96	Return	75.0	68.0
Preheat	-438.6	77,929	62.8	67.9	Mincfm	0	0	Clg Btuh/Sqft	11.51	Ret/OA	77.4	62.8
Reheat	0.0	0	0.0	0.0	Return	77,929	77,929	No. People	600	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	9,000	9,000	Htg % OA	11.5	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-1,150.5				Auxil	0	0	Htg Btuh/SqFt	-14.76	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

January			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	33.4	31.1	-572,430	0.0		-701,411	0.0		-714,446	0.0		-714,520	0.0		-714,520	0.0	
2	32.9	30.7	-573,516	0.0		-710,200	0.0		-720,713	0.0		-720,773	0.0		-720,774	0.0	
3	33.1	31.3	-577,074	0.0		-705,063	0.0		-713,544	0.0		-713,593	0.0		-713,593	0.0	
4	33.9	32.1	-579,177	0.0		-688,217	0.0		-695,060	0.0		-695,099	0.0		-695,100	0.0	
5	35.2	33.5	-579,083	0.0		-661,900	0.0		-667,422	0.0		-667,453	0.0		-667,453	0.0	
6	37.0	35.4	-563,153	0.0		-627,677	0.0		-632,131	0.0		-632,156	0.0		-632,156	0.0	
7	39.0	37.6	-536,659	0.0		-591,775	0.0		-595,369	0.0		-595,389	0.0		-595,389	0.0	
8	41.3	40.1	-493,909	0.0		-550,495	0.0		-553,394	0.0		-553,411	0.0		-553,411	0.0	
9	43.7	42.5	-429,718	0.0		-507,501	0.0		-509,840	0.0		-509,853	0.0		-509,853	0.0	
10	46.1	44.0	-351,933	0.0		-463,049	0.0		-464,935	0.0		-464,947	0.0		-464,947	0.0	
11	48.4	45.0	-261,590	0.0		-418,217	0.0		-419,738	0.0		-419,747	0.0		-419,747	0.0	
12	50.5	45.6	-172,414	0.0		-374,973	0.0		-376,199	0.0		-376,206	0.0		-376,206	0.0	
13	52.2	46.1	-102,282	0.0		-337,955	0.0		-338,943	0.0		-338,948	0.0		-338,948	0.0	
14	53.5	46.4	-50,660	0.0		-306,456	0.0		-307,253	0.0		-307,257	0.0		-307,257	0.0	
15	54.3	46.3	-22,372	0.0		-284,324	0.0		-284,965	0.0		-284,969	0.0		-284,969	0.0	
16	54.6	46.1	-20,810	0.0		-272,059	0.0		-272,576	0.0		-272,580	0.0		-272,580	0.0	
17	54.0	45.9	-39,477	0.0		-280,288	0.0		-280,704	0.0		-280,706	0.0		-280,706	0.0	
18	52.5	45.0	-82,265	0.0		-310,190	0.0		-310,526	0.0		-310,528	0.0		-310,528	0.0	
19	50.1	44.8	-138,666	0.0		-361,591	0.0		-361,861	0.0		-361,863	0.0		-361,863	0.0	
20	47.1	43.3	-198,068	0.0		-426,476	0.0		-426,694	0.0		-426,696	0.0		-426,696	0.0	
21	43.7	40.4	-251,069	0.0		-499,948	0.0		-500,124	0.0		-500,125	0.0		-500,125	0.0	
22	40.4	37.3	-302,194	0.0		-570,770	0.0		-570,912	0.0		-570,913	0.0		-570,913	0.0	
23	37.3	34.9	-343,342	0.0		-637,116	0.0		-637,230	0.0		-637,231	0.0		-637,231	0.0	
24	34.9	32.6	-377,800	0.0		-686,090	0.0		-686,181	0.0		-686,183	0.0		-686,183	0.0	

February			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	41.7	38.6	-398,696	0.0		-477,929	0.0		-548,082	0.0		-548,478	0.0		-548,480	0.0	
2	39.7	37.1	-425,617	0.0		-537,035	0.0		-593,613	0.0		-593,933	0.0		-593,933	0.0	
3	37.8	35.1	-449,856	0.0		-591,428	0.0		-637,059	0.0		-637,316	0.0		-637,317	0.0	
4	36.3	33.8	-470,953	0.0		-634,163	0.0		-670,967	0.0		-671,175	0.0		-671,176	0.0	
5	35.1	32.6	-483,683	0.0		-668,066	0.0		-697,751	0.0		-697,919	0.0		-697,919	0.0	
6	34.4	32.0	-482,680	0.0		-689,104	0.0		-713,046	0.0		-713,182	0.0		-713,182	0.0	
7	34.1	31.9	-468,709	0.0		-700,723	0.0		-720,035	0.0		-720,145	0.0		-720,145	0.0	
8	34.6	32.4	-435,913	0.0		-693,585	0.0		-709,161	0.0		-709,249	0.0		-709,249	0.0	
9	36.0	33.8	-384,448	0.0		-664,903	0.0		-677,466	0.0		-677,538	0.0		-677,538	0.0	
10	38.2	34.7	-317,362	0.0		-617,067	0.0		-627,198	0.0		-627,254	0.0		-627,254	0.0	
11	40.9	36.2	-239,612	0.0		-557,221	0.0		-565,385	0.0		-565,432	0.0		-565,432	0.0	
12	43.9	37.4	-162,663	0.0		-489,911	0.0		-496,486	0.0		-496,524	0.0		-496,524	0.0	
13	46.9	39.4	-98,518	0.0		-421,032	0.0		-426,327	0.0		-426,357	0.0		-426,357	0.0	
14	49.7	41.4	-52,990	0.0		-354,916	0.0		-359,181	0.0		-359,204	0.0		-359,204	0.0	
15	51.8	42.8	-25,065	0.0		-304,837	0.0		-308,271	0.0		-308,290	0.0		-308,290	0.0	
16	53.2	43.9	-23,537	0.0		-271,578	0.0		-274,343	0.0		-274,358	0.0		-274,358	0.0	
17	53.7	44.2	-37,469	0.0		-260,294	0.0		-262,519	0.0		-262,530	0.0		-262,530	0.0	
18	53.4	44.4	-74,115	0.0		-267,414	0.0		-269,206	0.0		-269,216	0.0		-269,216	0.0	
19	52.7	44.4	-121,513	0.0		-284,008	0.0		-285,452	0.0		-285,459	0.0		-285,459	0.0	
20	51.5	45.2	-175,598	0.0		-313,294	0.0		-314,458	0.0		-314,464	0.0		-314,464	0.0	
21	50.0	44.6	-220,945	0.0		-349,614	0.0		-350,553	0.0		-350,556	0.0		-350,556	0.0	
22	48.1	43.3	-267,239	0.0		-395,752	0.0		-396,507	0.0		-396,511	0.0		-396,511	0.0	
23	46.1	41.8	-306,835	0.0		-444,087	0.0		-444,696	0.0		-444,699	0.0		-444,699	0.0	
24	43.9	40.1	-337,738	0.0		-496,588	0.0		-497,079	0.0		-497,081	0.0		-497,081	0.0	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

March		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	51.3	46.8	-177,224	0.0		-21,839	0.0			-280,463	0.0			-285,360	0.0			-285,447	0.0		
2	48.7	44.6	-198,308	0.0		-135,144	0.0			-343,509	0.0			-347,458	0.0			-347,529	0.0		
3	46.6	42.9	-216,294	0.0		-224,955	0.0			-392,983	0.0			-396,166	0.0			-396,224	0.0		
4	44.9	41.4	-236,007	0.0		-296,921	0.0			-432,443	0.0			-435,010	0.0			-435,057	0.0		
5	43.9	40.8	-243,450	0.0		-346,113	0.0			-455,425	0.0			-457,497	0.0			-457,534	0.0		
6	43.5	40.8	-235,886	0.0		-377,445	0.0			-465,622	0.0			-467,292	0.0			-467,322	0.0		
7	44.0	41.4	-214,026	0.0		-384,611	0.0			-456,193	0.0			-457,540	0.0			-457,565	0.0		
8	45.4	42.7	-168,688	0.0		-368,625	0.0			-426,011	0.0			-427,098	0.0			-427,118	0.0		
9	47.7	44.3	-100,636	0.0		-329,549	0.0			-375,836	0.0			-376,714	0.0			-376,729	0.0		
10	50.6	45.8	-16,762	0.0		-275,405	0.0			-312,727	0.0			-313,435	0.0			-313,447	0.0		
11	53.9	47.4	0	0.0		-208,764	0.0			-238,847	0.0			-239,417	0.0			-239,427	0.0		
12	57.4	49.0	0	0.0		-133,684	0.0			-157,927	0.0			-158,387	0.0			-158,394	0.0		
13	60.7	50.8	0	0.0		-60,764	0.0			-80,293	0.0			-80,663	0.0			-80,669	0.0		
14	63.6	52.7	0	0.0		0	0.0			-10,877	0.0			-11,175	0.0			-11,181	0.0		
15	65.9	53.7	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
16	67.3	54.4	0	4.0		0	0.0			0	0.0			0	0.0			0	0.0		
17	67.8	54.6	0	2.0		0	0.0			0	0.0			0	0.0			0	0.0		
18	67.4	54.8	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
19	66.4	55.2	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
20	64.7	56.0	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
21	62.5	56.0	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
22	60.0	54.1	0	0.0		-57,019	0.0			-66,365	0.0			-66,533	0.0			-66,535	0.0		
23	57.1	51.9	0	0.0		-133,902	0.0			-141,435	0.0			-141,571	0.0			-141,572	0.0		
24	54.2	49.4	0	0.0		-208,178	0.0			-214,252	0.0			-214,360	0.0			-214,362	0.0		

April		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	61.0	56.5	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
2	58.9	54.9	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
3	57.0	53.5	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
4	55.4	52.4	0	0.0		0	0.0			-15,905	0.0			-25,057	0.0			-25,947	0.0		
5	54.2	51.4	0	0.0		0	0.0			-77,412	0.0			-84,808	0.0			-85,535	0.0		
6	53.5	50.9	0	0.0		-37,115	0.0			-120,905	0.0			-126,875	0.0			-127,462	0.0		
7	53.2	51.1	0	0.0		-82,684	0.0			-150,372	0.0			-155,190	0.0			-155,664	0.0		
8	53.9	51.5	0	0.0		-97,597	0.0			-152,230	0.0			-156,119	0.0			-156,500	0.0		
9	55.9	52.1	0	0.0		-76,661	0.0			-120,740	0.0			-123,877	0.0			-124,187	0.0		
10	58.9	53.2	0	0.0		-27,761	0.0			-63,312	0.0			-65,842	0.0			-66,091	0.0		
11	62.6	55.2	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
12	66.5	57.3	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
13	70.2	59.6	0	9.3		0	0.0			0	0.0			0	0.0			0	0.0		
14	73.2	61.0	0	10.3		0	0.0			0	0.0			0	0.0			0	0.0		
15	75.2	62.2	0	10.1		0	0.0			0	0.0			0	0.0			0	0.0		
16	75.9	62.2	0	9.0		0	0.0			0	0.0			0	0.0			0	0.0		
17	75.6	62.0	0	19.7		0	3.1			0	0.0			0	0.0			0	0.0		
18	74.9	61.7	0	37.1		0	2.2			0	2.4			0	2.4			0	2.4		
19	73.7	62.0	0	32.2		0	0.9			0	1.1			0	1.1			0	1.1		
20	72.1	62.4	0	26.7		0	0.0			0	0.0			0	0.0			0	0.0		
21	70.2	63.3	0	20.8		0	0.0			0	0.0			0	0.0			0	0.0		
22	68.0	62.5	0	14.5		0	0.0			0	0.0			0	0.0			0	0.0		
23	65.7	60.5	0	8.7		0	0.0			0	0.0			0	0.0			0	0.0		
24	63.4	58.5	0	4.3		0	0.0			0	0.0			0	0.0			0	0.0		

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton		
1	68.2	63.5		0		0.0		0		2.4		0		2.9		0		2.9		
2	65.7	61.5		0		0.0		0		0.0		0		0.0		0		0.0		
3	63.6	59.7		0		0.0		0		0.0		0		0.0		0		0.0		
4	61.8	58.4		0		0.0		0		0.0		0		0.0		0		0.0		
5	60.5	57.1		0		0.0		0		0.0		0		0.0		0		0.0		
6	59.7	56.5		0		0.0		0		0.0		0		0.0		0		0.0		
7	59.4	56.5		0		0.0		0		0.0		0		0.0		0		0.0		
8	60.1	56.3		0		0.0		0		0.0		0		0.0		0		0.0		
9	62.4	56.3		0		1.5		0		0.0		0		0.0		0		0.0		
10	65.7	57.2		0		12.6		0		0.0		0		0.0		0		0.0		
11	69.9	58.9		0		25.4		0		0.0		0		0.0		0		0.0		
12	74.3	60.9		0		34.6		0		1.2		0		1.2		0		1.2		
13	78.5	63.7		0		42.0		0		4.5		0		4.5		0		4.5		
14	81.9	65.3		0		48.4		0		7.1		0		7.1		0		7.1		
15	84.1	66.9		0		53.2		0		8.5		0		8.5		0		8.5		
16	84.9	67.1		0		55.0		0		8.8		0		8.8		0		8.8		
17	84.6	67.3		0		56.0		0		14.1		0		14.1		0		14.1		
18	83.8	67.1		0		53.7		0		29.7		0		29.7		0		29.7		
19	82.4	67.5		0		50.3		0		28.3		0		28.3		0		28.3		
20	80.6	68.9		0		43.3		0		24.8		0		24.8		0		24.8		
21	78.5	71.0		0		37.3		0		24.8		0		24.8		0		24.8		
22	76.1	69.9		0		31.3		0		21.2		0		21.2		0		21.2		
23	73.4	68.0		0		25.3		0		14.5		0		14.5		0		14.5		
24	70.8	65.5		0		20.8		0		8.4		0		8.4		0		8.4		

June	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		38.2		0		18.9		0		23.0		0		23.0		0		23.0
2	72.6	68.4		0		32.3		0		15.2		0		16.2		0		16.2		0		16.2
3	70.9	67.3		0		27.3		0		9.6		0		9.9		0		9.9		0		9.9
4	69.6	66.5		0		24.2		0		5.4		0		5.5		0		5.5		0		5.5
5	68.7	65.8		0		21.9		0		1.8		0		1.9		0		1.9		0		1.9
6	68.5	65.7		0		20.5		0		0.0		0		0.0		0		0.0		0		0.0
7	69.0	66.3		0		22.7		0		0.0		0		0.0		0		0.0		0		0.0
8	70.6	66.9		0		27.3		0		0.0		0		0.0		0		0.0		0		0.0
9	73.0	67.7		0		32.1		0		2.4		0		2.4		0		2.4		0		2.4
10	76.1	68.1		0		39.3		0		13.1		0		13.2		0		13.2		0		13.2
11	79.5	69.1		0		47.2		0		20.0		0		20.0		0		20.0		0		20.0
12	82.9	70.1		0		55.2		0		27.0		0		27.0		0		27.0		0		27.0
13	86.0	71.0		0		62.3		0		34.4		0		34.4		0		34.4		0		34.4
14	88.4	72.5		0		67.3		0		42.7		0		42.7		0		42.7		0		42.7
15	90.0	74.0		0		72.1		0		49.9		0		49.9		0		49.9		0		49.9
16	90.5	73.7		0		74.7		0		51.4		0		51.4		0		51.4		0		51.4
17	90.3	74.2		0		74.7		0		53.4		0		53.4		0		53.4		0		53.4
18	89.4	73.9		0		73.3		0		54.2		0		54.2		0		54.2		0		54.2
19	88.1	74.5		0		69.0		0		53.3		0		53.3		0		53.3		0		53.3
20	86.4	75.3		0		62.6		0		50.1		0		50.1		0		50.1		0		50.1
21	84.3	76.5		0		57.9		0		50.9		0		50.9		0		50.9		0		50.9
22	81.9	75.7		0		52.3		0		47.3		0		47.3		0		47.3		0		47.3
23	79.5	74.0		0		47.2		0		40.1		0		40.1		0		40.1		0		40.1
24	77.0	72.1		0		41.8		0		31.8		0		31.8		0		31.8		0		31.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

July			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	73.7	70.5		0	41.4		0	15.3		0	18.5		0	18.5		0	18.5
2	72.4	69.4		0	33.6		0	12.7		0	13.8		0	13.8		0	13.8
3	71.3	68.4		0	28.9		0	7.3		0	7.6		0	7.6		0	7.6
4	70.5	67.7		0	26.1		0	3.7		0	3.8		0	3.8		0	3.8
5	70.0	67.4		0	24.0		0	0.4		0	0.4		0	0.4		0	0.4
6	69.9	67.5		0	22.5		0	0.0		0	0.0		0	0.0		0	0.0
7	70.3	68.0		0	24.6		0	0.0		0	0.0		0	0.0		0	0.0
8	71.7	69.0		0	28.4		0	0.0		0	0.0		0	0.0		0	0.0
9	73.7	69.5		0	33.5		0	2.9		0	2.9		0	2.9		0	2.9
10	76.2	70.6		0	39.1		0	16.2		0	16.2		0	16.2		0	16.2
11	78.9	71.8		0	45.1		0	23.5		0	23.5		0	23.5		0	23.5
12	81.4	73.0		0	54.3		0	31.2		0	31.2		0	31.2		0	31.2
13	83.4	74.4		0	61.8		0	39.1		0	39.1		0	39.1		0	39.1
14	84.8	74.8		0	66.7		0	43.7		0	43.7		0	43.7		0	43.7
15	85.2	75.0		0	71.5		0	47.3		0	47.3		0	47.3		0	47.3
16	85.1	75.0		0	73.7		0	49.1		0	49.1		0	49.1		0	49.1
17	84.6	74.7		0	74.5		0	49.1		0	49.1		0	49.1		0	49.1
18	83.8	74.6		0	71.7		0	49.4		0	49.4		0	49.4		0	49.4
19	82.7	74.6		0	67.4		0	49.0		0	49.0		0	49.0		0	49.0
20	81.4	74.4		0	62.4		0	46.1		0	46.1		0	46.1		0	46.1
21	79.9	74.9		0	57.2		0	43.9		0	43.9		0	43.9		0	43.9
22	78.4	74.0		0	52.0		0	38.1		0	38.1		0	38.1		0	38.1
23	76.8	72.7		0	47.4		0	30.3		0	30.3		0	30.3		0	30.3
24	75.2	71.6		0	42.2		0	24.7		0	24.7		0	24.7		0	24.7

August			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	75.0	72.0		0	41.8		0	19.2		0	23.9		0	23.9		0	23.9
2	73.2	70.3		0	33.3		0	15.7		0	17.0		0	17.0		0	17.0
3	71.7	68.9		0	27.8		0	9.9		0	10.2		0	10.2		0	10.2
4	70.4	67.8		0	24.7		0	5.3		0	5.4		0	5.4		0	5.4
5	69.5	66.8		0	21.7		0	1.3		0	1.3		0	1.3		0	1.3
6	68.9	66.4		0	20.5		0	0.0		0	0.0		0	0.0		0	0.0
7	68.7	66.4		0	21.0		0	0.0		0	0.0		0	0.0		0	0.0
8	69.2	66.8		0	24.2		0	0.0		0	0.0		0	0.0		0	0.0
9	70.8	67.7		0	30.5		0	0.0		0	0.0		0	0.0		0	0.0
10	73.2	67.7		0	37.5		0	0.0		0	0.0		0	0.0		0	0.0
11	76.2	68.8		0	45.6		0	14.2		0	14.2		0	14.2		0	14.2
12	79.3	70.3		0	53.8		0	24.9		0	24.9		0	24.9		0	24.9
13	82.3	72.2		0	62.6		0	32.9		0	32.9		0	32.9		0	32.9
14	84.7	73.7		0	70.5		0	40.9		0	40.9		0	40.9		0	40.9
15	86.3	74.6		0	74.1		0	47.3		0	47.3		0	47.3		0	47.3
16	86.8	75.1		0	74.7		0	51.7		0	51.7		0	51.7		0	51.7
17	86.6	75.1		0	74.7		0	52.6		0	52.6		0	52.6		0	52.6
18	86.0	75.3		0	74.7		0	55.2		0	55.2		0	55.2		0	55.2
19	85.1	76.0		0	69.2		0	54.1		0	54.1		0	54.1		0	54.1
20	83.8	76.8		0	62.5		0	52.4		0	52.4		0	52.4		0	52.4
21	82.3	77.2		0	59.0		0	50.2		0	50.2		0	50.2		0	50.2
22	80.6	76.3		0	51.7		0	45.9		0	45.9		0	45.9		0	45.9
23	78.7	75.3		0	46.2		0	38.5		0	38.5		0	38.5		0	38.5
24	76.8	73.7		0	40.9		0	31.0		0	31.0		0	31.0		0	31.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

September			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	69.6	67.4		0	24.6		0	3.3		0	4.5		0	4.5		0	4.5
2	67.6	65.0		0	16.7		0	0.0		0	0.0		0	0.0		0	0.0
3	65.8	63.4		0	11.9		0	0.0		0	0.0		0	0.0		0	0.0
4	64.3	62.2		0	8.0		0	0.0		0	0.0		0	0.0		0	0.0
5	63.1	61.1		0	5.8		0	0.0		0	0.0		0	0.0		0	0.0
6	62.4	60.3		0	4.5		0	0.0		0	0.0		0	0.0		0	0.0
7	62.2	60.2		0	4.2		0	0.0		0	0.0		0	0.0		0	0.0
8	62.9	60.9		0	7.5		0	0.0		0	0.0		0	0.0		0	0.0
9	64.7	61.8		0	12.5		0	0.0		0	0.0		0	0.0		0	0.0
10	67.6	62.1		0	20.0		0	0.0		0	0.0		0	0.0		0	0.0
11	71.1	63.1		0	28.9		0	0.0		0	0.0		0	0.0		0	0.0
12	74.8	64.6		0	37.1		0	1.2		0	1.2		0	1.2		0	1.2
13	78.3	66.7		0	46.2		0	3.9		0	3.9		0	3.9		0	3.9
14	81.2	68.4		0	53.4		0	6.1		0	6.1		0	6.1		0	6.1
15	83.0	70.0		0	58.5		0	7.7		0	7.7		0	7.7		0	7.7
16	83.7	70.5		0	60.8		0	28.6		0	28.6		0	28.6		0	28.6
17	83.4	70.5		0	58.8		0	34.7		0	34.8		0	34.8		0	34.8
18	82.8	70.9		0	54.9		0	36.0		0	36.0		0	36.0		0	36.0
19	81.6	72.7		0	50.3		0	34.6		0	34.6		0	34.6		0	34.6
20	80.1	74.7		0	46.9		0	35.0		0	35.0		0	35.0		0	35.0
21	78.3	74.1		0	41.3		0	32.0		0	32.0		0	32.0		0	32.0
22	76.3	72.4		0	34.9		0	26.9		0	26.9		0	26.9		0	26.9
23	74.1	70.7		0	27.6		0	19.1		0	19.1		0	19.1		0	19.1
24	71.8	68.9		0	22.2		0	10.8		0	10.8		0	10.8		0	10.8

October			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	52.2	50.5		0	0.0		0	0.0	-213,735	0.0	-222,321	0.0	-222,578	0.0			
2	50.1	48.6		0	0.0	-38,030	0.0		-270,360	0.0	-277,291	0.0	-277,499	0.0			
3	48.4	46.9		0	0.0	-128,077	0.0		-315,757	0.0	-321,354	0.0	-321,521	0.0			
4	47.1	45.8		0	0.0	-199,522	0.0		-351,037	0.0	-355,555	0.0	-355,690	0.0			
5	46.3	44.8		0	0.0	-252,196	0.0		-374,497	0.0	-378,144	0.0	-378,253	0.0			
6	46.0	44.5		0	0.0	-288,521	0.0		-387,221	0.0	-390,163	0.0	-390,252	0.0			
7	46.8	45.3	-4,038	0.0		-294,554	0.0		-374,197	0.0	-376,573	0.0	-376,644	0.0			
8	48.9	47.5		0	0.0	-266,782	0.0		-331,053	0.0	-332,970	0.0	-333,027	0.0			
9	52.2	49.9		0	0.0	-208,467	0.0		-260,326	0.0	-261,872	0.0	-261,919	0.0			
10	56.2	52.5		0	0.0	-131,812	0.0		-173,641	0.0	-174,889	0.0	-174,926	0.0			
11	60.4	54.4		0	0.0	-47,872	0.0		-81,600	0.0	-82,606	0.0	-82,636	0.0			
12	64.4	56.0		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
13	67.7	57.3		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
14	69.8	58.2		0	6.2		0	0.0		0	0.0		0	0.0		0	0.0
15	70.6	58.1		0	6.2		0	0.0		0	0.0		0	0.0		0	0.0
16	70.3	57.5		0	5.0		0	0.0		0	0.0		0	0.0		0	0.0
17	69.5	57.3		0	3.0		0	0.0		0	0.0		0	0.0		0	0.0
18	68.2	57.7		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0
19	66.5	60.6		0	17.8		0	0.0		0	0.0		0	0.0		0	0.0
20	64.4	60.8		0	11.1		0	0.0		0	0.0		0	0.0		0	0.0
21	62.1	59.4		0	4.3		0	0.0		0	0.0		0	0.0		0	0.0
22	59.6	57.3		0	0.0		0	0.0	-16,679	0.0	-17,167	0.0	-17,183	0.0			
23	57.0	55.1		0	0.0	-78,757	0.0		-91,930	0.0	-92,324	0.0	-92,336	0.0			
24	54.5	52.7		0	0.0	-150,192	0.0		-160,827	0.0	-161,145	0.0	-161,156	0.0			

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-133,381	0.0	-29,744	0.0	-268,621	0.0	-273,764	0.0	-273,876	0.0
2	49.4	47.3	-170,257	0.0	-138,009	0.0	-330,907	0.0	-335,059	0.0	-335,149	0.0
3	47.2	45.3	-203,859	0.0	-226,460	0.0	-382,161	0.0	-385,511	0.0	-385,585	0.0
4	45.3	43.4	-230,894	0.0	-300,097	0.0	-425,767	0.0	-428,471	0.0	-428,530	0.0
5	43.9	42.2	-246,475	0.0	-355,944	0.0	-457,377	0.0	-459,559	0.0	-459,607	0.0
6	43.0	41.4	-241,389	0.0	-395,991	0.0	-477,861	0.0	-479,623	0.0	-479,661	0.0
7	42.7	41.2	-221,018	0.0	-419,325	0.0	-485,403	0.0	-486,825	0.0	-486,857	0.0
8	43.5	42.0	-174,545	0.0	-414,222	0.0	-467,553	0.0	-468,701	0.0	-468,726	0.0
9	45.9	44.0	-99,694	0.0	-369,158	0.0	-412,197	0.0	-413,123	0.0	-413,143	0.0
10	49.4	46.6	-9,952	0.0	-296,646	0.0	-331,376	0.0	-332,123	0.0	-332,139	0.0
11	53.8	48.6	0	0.0	-201,999	0.0	-230,008	0.0	-230,612	0.0	-230,624	0.0
12	58.4	50.6	0	0.0	-102,984	0.0	-125,566	0.0	-126,053	0.0	-126,064	0.0
13	62.8	52.6	0	0.0	-8,825	0.0	-26,948	0.0	-27,341	0.0	-27,349	0.0
14	66.3	54.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	5.2	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	0.0	-54,948	0.0	-64,730	0.0	-64,941	0.0	-64,944	0.0
23	57.5	54.0	0	0.0	-129,073	0.0	-136,966	0.0	-137,137	0.0	-137,141	0.0
24	54.7	51.7	0	0.0	-201,786	0.0	-208,158	0.0	-208,296	0.0	-208,298	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-277,722	0.0	-400,451	0.0	-456,924	0.0	-457,248	0.0	-457,250	0.0
2	43.2	41.1	-302,455	0.0	-450,235	0.0	-495,796	0.0	-496,057	0.0	-496,059	0.0
3	41.8	39.8	-324,450	0.0	-490,405	0.0	-527,159	0.0	-527,370	0.0	-527,372	0.0
4	40.7	38.7	-342,753	0.0	-522,445	0.0	-552,101	0.0	-552,270	0.0	-552,272	0.0
5	40.1	38.4	-355,426	0.0	-542,268	0.0	-566,197	0.0	-566,333	0.0	-566,334	0.0
6	39.9	38.4	-350,270	0.0	-552,586	0.0	-571,894	0.0	-572,004	0.0	-572,005	0.0
7	40.5	39.0	-333,947	0.0	-544,525	0.0	-560,103	0.0	-560,192	0.0	-560,193	0.0
8	42.2	40.7	-299,601	0.0	-511,125	0.0	-523,693	0.0	-523,765	0.0	-523,765	0.0
9	44.9	43.4	-245,655	0.0	-454,740	0.0	-464,879	0.0	-464,937	0.0	-464,937	0.0
10	48.2	45.8	-178,177	0.0	-384,420	0.0	-392,599	0.0	-392,645	0.0	-392,645	0.0
11	51.7	48.3	-93,738	0.0	-308,819	0.0	-315,413	0.0	-315,450	0.0	-315,450	0.0
12	55.0	50.7	-13,139	0.0	-236,821	0.0	-242,137	0.0	-242,167	0.0	-242,167	0.0
13	57.7	52.0	0	0.0	-177,571	0.0	-181,857	0.0	-181,880	0.0	-181,880	0.0
14	59.5	52.6	0	0.0	-137,741	0.0	-141,196	0.0	-141,216	0.0	-141,216	0.0
15	60.1	52.7	0	0.0	-124,241	0.0	-127,025	0.0	-127,042	0.0	-127,042	0.0
16	59.9	52.6	0	0.0	-126,369	0.0	-128,613	0.0	-128,626	0.0	-128,626	0.0
17	59.2	52.1	0	0.0	-138,173	0.0	-139,981	0.0	-139,992	0.0	-139,992	0.0
18	58.2	51.8	0	0.0	-157,602	0.0	-159,060	0.0	-159,068	0.0	-159,068	0.0
19	56.8	52.2	0	0.0	-187,604	0.0	-188,780	0.0	-188,787	0.0	-188,787	0.0
20	55.0	51.4	0	0.0	-227,666	0.0	-228,614	0.0	-228,619	0.0	-228,619	0.0
21	53.1	50.1	-39,272	0.0	-270,230	0.0	-270,996	0.0	-271,000	0.0	-271,000	0.0
22	51.0	48.1	-98,505	0.0	-318,237	0.0	-318,853	0.0	-318,858	0.0	-318,858	0.0
23	48.9	46.2	-147,714	0.0	-366,222	0.0	-366,720	0.0	-366,724	0.0	-366,724	0.0
24	46.9	44.1	-187,297	0.0	-411,279	0.0	-411,681	0.0	-411,684	0.0	-411,684	0.0

01 Card - Job Information

Project: GREENY HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29809 (1 BLDG)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	GREENY HALL

-----CARD 20-- General Room Parameters-----

Room	Zone						Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per	Depth
	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	
1	1	BLOCK	315.5	123.5	3	0		11.6	2		

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag		Average	Floor
1		50		CLGCONST				HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Constuc	Type	Direction	Tilt	Alpha	Reflectance Multiplier
1	1	202.75	12		196	0				
1	2	61.5	12		196	90				
1	3	202.75	12		196	180				
1	4	61.5	12		196	270				
1	5	55	12		196	0				
1	6	52	12		196	90				
1	7	55	12		196	180				
1	8	52	12		196	270				
1	9	55	12		196	0				
1	10	52	12		196	90				
1	11	55	12		196	180				
1	12	52	12		196	270				

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of	U-Value	Coefficient	Shading	Shading	Solar to	Transmittance	Visible
				Windows			Type	Type	Ret. Air		Reflectance
1	1	2.5	5.5	30	1.03	.82					
1	2	2.5	5.5	4	1.03	.82					
1	3	2.5	5.5	30	1.03	.82					
1	4	2.5	5.5	2	1.03	.82					
1	5	11.5	10	1	1.03	.82					
1	6	4.2	10	1	1.03	.82					
1	7	11.5	10	1	1.03	.82					
1	8	4.2	10	1	1.03	.82					
1	9	11.5	10	1	1.03	.82					
1	10	4.2	10	1	1.03	.82					
1	11	11.5	10	1	1.03	.82					
1	12	4.2	10	1	1.03	.82					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	300	PEOPLE	255	325	2.3	WATT-SF	SUSFLUOR				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	200	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
1	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	MULTI ZONE SYSTEM

-----CARD 40--- System Type -----

System Number	System Type	-----OPTIONAL VENTILATION SYSTEM-----					
		Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
	MZ						

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHO FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

MZ MULTIZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHO FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
------	--------------

0	0
---	---

24	
----	--

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
------	--------------

0	0
---	---

24	
----	--

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

0 100
24

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*****  
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**          T R A C E    6 0 0    A N A L Y S I S          **  
**  
**          by          **  
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ALLEN HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29813 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 12:30:51 8/16/94
Dataset Name: FGTYPS23 .TM

System 1 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)					Mo/Hr: 6/18	*	Mo/Hr: 6/18	*	Mo/Hr: 13/ 1			
Outside Air ==)					OADB/WB/HR: 96/ 73/ 84.0	*	OADB: 96	*	OADB: 23			
					*	*						
	Space	Ret. Air	Ret. Air	Net	Perct	*	Space	Perct	*	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	190,628	0		190,628	27.37	*	190,628	27.37	*	-123,251	-123,251	16.66
Glass Solar	131,942	0		131,942	18.94	*	131,942	18.94	*	0	0	0.00
Glass Cond	75,663	0		75,663	10.86	*	75,663	10.86	*	-180,711	-180,711	24.43
Wall Cond	298,233	0		298,233	42.82	*	298,233	42.82	*	-435,729	-435,729	58.91
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	0			0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	696,466	0		696,466	100.00	*	696,466	100.00	*	-739,691	-739,691	100.00
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
					*	*						
Grand Total==)	696,467	0	0	696,467	100.00	*	696,467	100.00	*	-739,691	-739,691	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	77,928
Main Clg	58.0	696.5	696.5	77,929	75.0	62.5	65.2	66.9	59.6	65.2	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	38,964
Totals	58.0	696.5									Wall	31,728
												3,566
												11

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	0.0	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	0	0	Clg Cfm/Sqft	1.00	SADB	66.9	76.6
Main Htg	-739.7	77,929	68.0	76.6	Infil	0	0	Clg Cfm/Ton	1342.69	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	77,929	77,929	Clg Sqft/Ton	1342.69	Return	75.0	68.0
Preheat	-0.0	77,929	68.0	66.9	Mincfm	0	0	Clg Btuh/Sqft	8.94	Ret/OA	75.0	68.0
Reheat	0.0	0	0.0	0.0	Return	77,929	77,929	No. People	724	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	0	0	Htg % OA	0.0	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-739.7				Auxil	0	0	Htg Btuh/SqFt	-9.49	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SZ SYSTEMS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-686,922	0.0	-44,770	0.0	-354,513	0.0	-354,513	0.0	-354,513	0.0
2	32.9	30.7	-593,811	0.0	-392,797	0.0	-392,797	0.0	-392,797	0.0	-392,797	0.0
3	33.1	31.3	-524,842	0.0	-395,780	0.0	-395,780	0.0	-395,780	0.0	-395,780	0.0
4	33.9	32.1	-474,803	0.0	-401,015	0.0	-401,015	0.0	-401,015	0.0	-401,015	0.0
5	35.2	33.5	-439,823	0.0	-408,697	0.0	-408,697	0.0	-408,697	0.0	-408,697	0.0
6	37.0	35.4	-415,679	0.0	-418,280	0.0	-418,280	0.0	-418,280	0.0	-418,280	0.0
7	39.0	37.6	-399,529	0.0	-428,011	0.0	-428,011	0.0	-428,011	0.0	-428,011	0.0
8	41.3	40.1	-353,935	0.0	-436,460	0.0	-436,460	0.0	-436,460	0.0	-436,460	0.0
9	43.7	42.5	-319,311	0.0	-441,919	0.0	-441,919	0.0	-441,919	0.0	-441,919	0.0
10	46.1	44.0	-258,386	0.0	-441,473	0.0	-441,473	0.0	-441,473	0.0	-441,473	0.0
11	48.4	45.0	-196,775	0.0	-433,991	0.0	-433,991	0.0	-433,991	0.0	-433,991	0.0
12	50.5	45.6	-111,909	0.0	-420,027	0.0	-420,027	0.0	-420,027	0.0	-420,027	0.0
13	52.2	46.1	-43,706	0.0	-375,475	0.0	-375,475	0.0	-375,475	0.0	-375,475	0.0
14	53.5	46.4	0	0.0	-229,965	0.0	-229,965	0.0	-229,965	0.0	-229,965	0.0
15	54.3	46.3	0	0.0	-183,433	0.0	-183,433	0.0	-183,433	0.0	-183,433	0.0
16	54.6	46.1	0	0.0	-156,012	0.0	-156,012	0.0	-156,012	0.0	-156,012	0.0
17	54.0	45.9	0	0.0	-129,963	0.0	-129,963	0.0	-129,963	0.0	-129,963	0.0
18	52.5	45.0	0	0.0	-136,241	0.0	-136,241	0.0	-136,241	0.0	-136,241	0.0
19	50.1	44.8	0	0.0	-155,116	0.0	-155,116	0.0	-155,116	0.0	-155,116	0.0
20	47.1	43.3	0	0.0	-186,979	0.0	-186,979	0.0	-186,979	0.0	-186,979	0.0
21	43.7	40.4	0	0.0	-218,404	0.0	-218,404	0.0	-218,404	0.0	-218,404	0.0
22	40.4	37.3	0	0.0	-247,723	0.0	-247,723	0.0	-247,723	0.0	-247,723	0.0
23	37.3	34.9	0	0.0	-288,868	0.0	-288,868	0.0	-288,868	0.0	-288,868	0.0
24	34.9	32.6	0	0.0	-328,836	0.0	-328,836	0.0	-328,836	0.0	-328,836	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-136,570	0.0	0	0.0	-310,736	0.0	-310,736	0.0	-310,736	0.0
2	39.7	37.1	-181,118	0.0	-34,367	0.0	-333,541	0.0	-333,541	0.0	-333,541	0.0
3	37.8	35.1	-221,671	0.0	-358,359	0.0	-358,359	0.0	-358,359	0.0	-358,359	0.0
4	36.3	33.8	-247,841	0.0	-379,848	0.0	-379,848	0.0	-379,848	0.0	-379,848	0.0
5	35.1	32.6	-270,436	0.0	-395,541	0.0	-395,541	0.0	-395,541	0.0	-395,541	0.0
6	34.4	32.0	-295,086	0.0	-400,300	0.0	-400,300	0.0	-400,300	0.0	-400,300	0.0
7	34.1	31.9	-316,436	0.0	-407,754	0.0	-407,754	0.0	-407,754	0.0	-407,754	0.0
8	34.6	32.4	-327,366	0.0	-416,745	0.0	-416,745	0.0	-416,745	0.0	-416,745	0.0
9	36.0	33.8	-291,012	0.0	-423,565	0.0	-423,565	0.0	-423,565	0.0	-423,565	0.0
10	38.2	34.7	-235,270	0.0	-425,416	0.0	-425,416	0.0	-425,416	0.0	-425,416	0.0
11	40.9	36.2	-177,761	0.0	-422,619	0.0	-422,619	0.0	-422,619	0.0	-422,619	0.0
12	43.9	37.4	-91,108	0.0	-413,825	0.0	-413,825	0.0	-413,825	0.0	-413,825	0.0
13	46.9	39.4	-23,523	0.0	-375,136	0.0	-375,136	0.0	-375,136	0.0	-375,136	0.0
14	49.7	41.4	0	0.0	-255,625	0.0	-255,625	0.0	-255,625	0.0	-255,625	0.0
15	51.8	42.8	0	0.0	-205,746	0.0	-205,746	0.0	-205,746	0.0	-205,746	0.0
16	53.2	43.9	0	0.0	-171,116	0.0	-171,116	0.0	-171,116	0.0	-171,116	0.0
17	53.7	44.2	0	0.0	-159,233	0.0	-159,233	0.0	-159,233	0.0	-159,233	0.0
18	53.4	44.4	0	0.0	-154,559	0.0	-154,559	0.0	-154,559	0.0	-154,559	0.0
19	52.7	44.4	0	0.0	-166,271	0.0	-166,271	0.0	-166,271	0.0	-166,271	0.0
20	51.5	45.2	0	0.0	-185,049	0.0	-185,049	0.0	-185,049	0.0	-185,049	0.0
21	50.0	44.6	0	0.0	-202,436	0.0	-202,436	0.0	-202,436	0.0	-202,436	0.0
22	48.1	43.3	0	0.0	-233,268	0.0	-233,268	0.0	-233,268	0.0	-233,268	0.0
23	46.1	41.8	0	0.0	-246,135	0.0	-246,135	0.0	-246,135	0.0	-246,135	0.0
24	43.9	40.1	0	0.0	-273,685	0.0	-273,685	0.0	-273,685	0.0	-273,685	0.0

March	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	51.3	46.8		0		0.0		0		0.0		-8,554		0.0		-8,554		0.0		-8,554		0.0
2	48.7	44.6		0		0.0		0		0.0		-135,796		0.0		-135,796		0.0		-135,796		0.0
3	46.6	42.9		0		0.0		0		0.0		-173,809		0.0		-173,809		0.0		-173,809		0.0
4	44.9	41.4		-41,366		0.0		0		0.0		-197,906		0.0		-197,906		0.0		-197,906		0.0
5	43.9	40.8		-89,767		0.0		0		0.0		-234,898		0.0		-234,898		0.0		-234,898		0.0
6	43.5	40.8		-127,430		0.0		0		0.0		-258,161		0.0		-258,161		0.0		-258,161		0.0
7	44.0	41.4		-151,250		0.0		-161,588		0.0		-278,376		0.0		-278,376		0.0		-278,376		0.0
8	45.4	42.7		-133,976		0.0		-285,211		0.0		-285,211		0.0		-285,211		0.0		-285,211		0.0
9	47.7	44.3		-105,581		0.0		-272,016		0.0		-272,016		0.0		-272,016		0.0		-272,016		0.0
10	50.6	45.8		-55,364		0.0		-251,575		0.0		-251,575		0.0		-251,575		0.0		-251,575		0.0
11	53.9	47.4		0		0.0		-198,037		0.0		-198,037		0.0		-198,037		0.0		-198,037		0.0
12	57.4	49.0		0		0.0		-134,897		0.0		-134,897		0.0		-134,897		0.0		-134,897		0.0
13	60.7	50.8		0		0.0		-78,833		0.0		-78,833		0.0		-78,833		0.0		-78,833		0.0
14	63.6	52.7		0		0.0		-19,677		0.0		-19,677		0.0		-19,677		0.0		-19,677		0.0
15	65.9	53.7		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
16	67.3	54.4		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
17	67.8	54.6		0		2.5		0		0.0		0		0.0		0		0.0		0		0.0
18	67.4	54.8		0		27.9		0		0.0		0		0.0		0		0.0		0		0.0
19	66.4	55.2		0		24.5		0		0.0		0		0.0		0		0.0		0		0.0
20	64.7	56.0		0		20.7		0		0.0		0		0.0		0		0.0		0		0.0
21	62.5	56.0		0		16.6		0		0.0		0		0.0		0		0.0		0		0.0
22	60.0	54.1		0		11.9		0		0.0		0		0.0		0		0.0		0		0.0
23	57.1	51.9		0		8.5		0		0.0		0		0.0		0		0.0		0		0.0
24	54.2	49.4		0		4.1		0		0.0		0		0.0		0		0.0		0		0.0

April	----- Design -----						----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	61.0	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
2	58.9	54.9		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
3	57.0	53.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
4	55.4	52.4		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
5	54.2	51.4		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
6	53.5	50.9		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
7	53.2	51.1		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
8	53.9	51.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
9	55.9	52.1		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
10	58.9	53.2		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
11	62.6	55.2		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
12	66.5	57.3		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
13	70.2	59.6		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
14	73.2	61.0		0		20.5		0		0.0		0		0.0		0		0.0		0		0.0
15	75.2	62.2		0		30.6		0		0.0		0		0.0		0		0.0		0		0.0
16	75.9	62.2		0		34.4		0		0.0		0		0.0		0		0.0		0		0.0
17	75.6	62.0		0		36.2		0		0.0		0		0.0		0		0.0		0		0.0
18	74.9	61.7		0		36.9		0		0.0		0		0.0		0		0.0		0		0.0
19	73.7	62.0		0		34.7		0		0.0		0		0.0		0		0.0		0		0.0
20	72.1	62.4		0		31.8		0		0.0		0		0.0		0		0.0		0		0.0
21	70.2	63.3		0		27.9		0		9.3		0		9.3		0		9.3		0		9.3
22	68.0	62.5		0		24.4		0		6.7		0		6.7		0		6.7		0		6.7
23	65.7	60.5		0		19.7		0		3.9		0		3.9		0		3.9		0		3.9
24	63.4	58.5		0		15.3		0		1.4		0		1.4		0		1.4		0		1.4

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
 SZ SYSTEMS

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton		
1	68.2	63.5		0		22.5		0		10.4		0		10.4		0		10.4		
2	65.7	61.5		0		19.6		0		8.1		0		8.1		0		8.1		
3	63.6	59.7		0		16.1		0		4.7		0		4.7		0		4.7		
4	61.8	58.4		0		12.5		0		2.5		0		2.5		0		2.5		
5	60.5	57.1		0		10.4		0		0.0		0		0.0		0		0.0		
6	59.7	56.5		0		8.2		0		0.0		0		0.0		0		0.0		
7	59.4	56.5		0		8.6		0		0.0		0		0.0		0		0.0		
8	60.1	56.3		0		10.1		0		0.0		0		0.0		0		0.0		
9	62.4	56.3		0		11.5		0		0.0		0		0.0		0		0.0		
10	65.7	57.2		0		14.6		0		0.0		0		0.0		0		0.0		
11	69.9	58.9		0		19.4		0		0.0		0		0.0		0		0.0		
12	74.3	60.9		0		24.2		0		0.0		0		0.0		0		0.0		
13	78.5	63.7		0		30.2		0		4.1		0		4.1		0		4.1		
14	81.9	65.3		0		35.2		0		13.8		0		13.8		0		13.8		
15	84.1	66.9		0		39.9		0		18.0		0		18.0		0		18.0		
16	84.9	67.1		0		43.0		0		21.1		0		21.1		0		21.1		
17	84.6	67.3		0		46.5		0		22.8		0		22.8		0		22.8		
18	83.8	67.1		0		48.3		0		24.2		0		24.2		0		24.2		
19	82.4	67.5		0		47.0		0		24.6		0		24.6		0		24.6		
20	80.6	68.9		0		43.7		0		22.6		0		22.6		0		22.6		
21	78.5	71.0		0		39.9		0		20.9		0		20.9		0		20.9		
22	76.1	69.9		0		34.7		0		18.1		0		18.1		0		18.1		
23	73.4	68.0		0		31.2		0		15.3		0		15.3		0		15.3		
24	70.8	65.5		0		26.7		0		12.8		0		12.8		0		12.8		

June	----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		33.4		0		19.8		0		19.8		0		19.8
2	72.6	68.4		0		30.6		0		16.4		0		16.4		0		16.4
3	70.9	67.3		0		26.9		0		14.1		0		14.1		0		14.1
4	69.6	66.5		0		23.5		0		10.8		0		10.8		0		10.8
5	68.7	65.8		0		21.2		0		8.8		0		8.8		0		8.8
6	68.5	65.7		0		19.2		0		6.9		0		6.9		0		6.9
7	69.0	66.3		0		19.6		0		6.4		0		6.4		0		6.4
8	70.6	66.9		0		21.4		0		6.0		0		6.0		0		6.0
9	73.0	67.7		0		24.0		0		8.0		0		8.0		0		8.0
10	76.1	68.1		0		26.9		0		11.1		0		11.1		0		11.1
11	79.5	69.1		0		31.4		0		14.1		0		14.1		0		14.1
12	82.9	70.1		0		36.1		0		17.2		0		17.2		0		17.2
13	86.0	71.0		0		39.6		0		21.8		0		21.8		0		21.8
14	88.4	72.5		0		44.4		0		24.8		0		24.8		0		24.8
15	90.0	74.0		0		49.1		0		29.1		0		29.1		0		29.1
16	90.5	73.7		0		52.3		0		31.0		0		31.0		0		31.0
17	90.3	74.2		0		56.1		0		32.7		0		32.7		0		32.7
18	89.4	73.9		0		57.8		0		34.1		0		34.1		0		34.1
19	88.1	74.5		0		57.2		0		34.7		0		34.7		0		34.7
20	86.4	75.3		0		53.9		0		32.7		0		32.7		0		32.7
21	84.3	76.5		0		49.8		0		30.9		0		30.9		0		30.9
22	81.9	75.7		0		45.9		0		27.9		0		27.9		0		27.9
23	79.5	74.0		0		40.9		0		25.0		0		25.0		0		25.0
24	77.0	72.1		0		37.5		0		22.3		0		22.3		0		22.3

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SZ SYSTEMS

July Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	30.4	0	15.5	0	15.5	0	15.5	0	15.5
2	72.4	69.4	0	27.7	0	13.4	0	13.4	0	13.4	0	13.4
3	71.3	68.4	0	25.3	0	11.1	0	11.1	0	11.1	0	11.1
4	70.5	67.7	0	23.0	0	9.1	0	9.1	0	9.1	0	9.1
5	70.0	67.4	0	19.8	0	7.2	0	7.2	0	7.2	0	7.2
6	69.9	67.5	0	17.8	0	5.3	0	5.3	0	5.3	0	5.3
7	70.3	68.0	0	19.0	0	4.7	0	4.7	0	4.7	0	4.7
8	71.7	69.0	0	19.4	0	4.5	0	4.5	0	4.5	0	4.5
9	73.7	69.5	0	22.1	0	6.6	0	6.6	0	6.6	0	6.6
10	76.2	70.6	0	25.2	0	9.6	0	9.6	0	9.6	0	9.6
11	78.9	71.8	0	28.6	0	12.7	0	12.7	0	12.7	0	12.7
12	81.4	73.0	0	33.5	0	16.1	0	16.1	0	16.1	0	16.1
13	83.4	74.4	0	38.2	0	20.4	0	20.4	0	20.4	0	20.4
14	84.8	74.8	0	41.9	0	23.7	0	23.7	0	23.7	0	23.7
15	85.2	75.0	0	46.7	0	26.8	0	26.8	0	26.8	0	26.8
16	85.1	75.0	0	49.8	0	28.4	0	28.4	0	28.4	0	28.4
17	84.6	74.7	0	52.0	0	29.7	0	29.7	0	29.7	0	29.7
18	83.8	74.6	0	53.6	0	31.1	0	31.1	0	31.1	0	31.1
19	82.7	74.6	0	52.6	0	30.3	0	30.3	0	30.3	0	30.3
20	81.4	74.4	0	49.3	0	29.3	0	29.3	0	29.3	0	29.3
21	79.9	74.9	0	46.6	0	26.3	0	26.3	0	26.3	0	26.3
22	78.4	74.0	0	42.7	0	23.6	0	23.6	0	23.6	0	23.6
23	76.8	72.7	0	38.0	0	20.6	0	20.6	0	20.6	0	20.6
24	75.2	71.6	0	34.6	0	18.1	0	18.1	0	18.1	0	18.1

August Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	29.9	0	16.9	0	16.9	0	16.9	0	16.9
2	73.2	70.3	0	27.2	0	14.6	0	14.6	0	14.6	0	14.6
3	71.7	68.9	0	23.7	0	12.3	0	12.3	0	12.3	0	12.3
4	70.4	67.8	0	21.6	0	10.3	0	10.3	0	10.3	0	10.3
5	69.5	66.8	0	19.6	0	7.2	0	7.2	0	7.2	0	7.2
6	68.9	66.4	0	17.6	0	5.5	0	5.5	0	5.5	0	5.5
7	68.7	66.4	0	16.6	0	4.1	0	4.1	0	4.1	0	4.1
8	69.2	66.8	0	18.0	0	3.6	0	3.6	0	3.6	0	3.6
9	70.8	67.7	0	19.7	0	4.8	0	4.8	0	4.8	0	4.8
10	73.2	67.7	0	23.4	0	8.0	0	8.0	0	8.0	0	8.0
11	76.2	68.8	0	28.4	0	11.7	0	11.7	0	11.7	0	11.7
12	79.3	70.3	0	33.8	0	16.5	0	16.5	0	16.5	0	16.5
13	82.3	72.2	0	38.9	0	20.1	0	20.1	0	20.1	0	20.1
14	84.7	73.7	0	44.2	0	24.6	0	24.6	0	24.6	0	24.6
15	86.3	74.6	0	47.7	0	27.8	0	27.8	0	27.8	0	27.8
16	86.8	75.1	0	51.8	0	30.7	0	30.7	0	30.7	0	30.7
17	86.6	75.1	0	53.5	0	32.2	0	32.2	0	32.2	0	32.2
18	86.0	75.3	0	54.3	0	32.9	0	32.9	0	32.9	0	32.9
19	85.1	76.0	0	52.2	0	32.6	0	32.6	0	32.6	0	32.6
20	83.8	76.8	0	49.3	0	30.7	0	30.7	0	30.7	0	30.7
21	82.3	77.2	0	45.4	0	27.7	0	27.7	0	27.7	0	27.7
22	80.6	76.3	0	41.6	0	25.8	0	25.8	0	25.8	0	25.8
23	78.7	75.3	0	37.2	0	22.9	0	22.9	0	22.9	0	22.9
24	76.8	73.7	0	34.0	0	20.4	0	20.4	0	20.4	0	20.4

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SZ SYSTEMS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	23.6	0	10.6	0	10.6	0	10.6	0	10.6
2	67.6	65.0	0	20.0	0	7.3	0	7.3	0	7.3	0	7.3
3	65.8	63.4	0	16.5	0	5.3	0	5.3	0	5.3	0	5.3
4	64.3	62.2	0	14.3	0	3.2	0	3.2	0	3.2	0	3.2
5	63.1	61.1	0	12.3	0	0.4	0	0.4	0	0.4	0	0.4
6	62.4	60.3	0	9.2	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	8.6	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	9.2	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	11.7	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	15.9	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	21.8	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	27.5	0	3.6	0	3.6	0	3.6	0	3.6
13	78.3	66.7	0	34.0	0	14.9	0	14.9	0	14.9	0	14.9
14	81.2	68.4	0	39.4	0	19.7	0	19.7	0	19.7	0	19.7
15	83.0	70.0	0	44.4	0	21.6	0	21.6	0	21.6	0	21.6
16	83.7	70.5	0	48.0	0	24.2	0	24.2	0	24.2	0	24.2
17	83.4	70.5	0	50.2	0	26.2	0	26.2	0	26.2	0	26.2
18	82.8	70.9	0	49.4	0	26.3	0	26.3	0	26.3	0	26.3
19	81.6	72.7	0	46.2	0	24.3	0	24.3	0	24.3	0	24.3
20	80.1	74.7	0	42.2	0	22.5	0	22.5	0	22.5	0	22.5
21	78.3	74.1	0	38.6	0	20.6	0	20.6	0	20.6	0	20.6
22	76.3	72.4	0	33.9	0	18.0	0	18.0	0	18.0	0	18.0
23	74.1	70.7	0	30.5	0	15.3	0	15.3	0	15.3	0	15.3
24	71.8	68.9	0	26.4	0	13.0	0	13.0	0	13.0	0	13.0

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
2	50.1	48.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	48.4	46.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	47.1	45.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	46.3	44.8	0	0.0	0	0.0	-173,659	0.0	-173,659	0.0	-173,659	0.0
6	46.0	44.5	0	0.0	0	0.0	-234,064	0.0	-234,064	0.0	-234,064	0.0
7	46.8	45.3	0	0.0	0	0.0	-254,301	0.0	-254,301	0.0	-254,301	0.0
8	48.9	47.5	0	0.0	-228,809	0.0	-245,001	0.0	-245,001	0.0	-245,001	0.0
9	52.2	49.9	0	0.0	-223,519	0.0	-223,519	0.0	-223,519	0.0	-223,519	0.0
10	56.2	52.5	0	0.0	-196,547	0.0	-196,547	0.0	-196,547	0.0	-196,547	0.0
11	60.4	54.4	0	0.0	-133,477	0.0	-133,477	0.0	-133,477	0.0	-133,477	0.0
12	64.4	56.0	0	0.0	-65,702	0.0	-65,702	0.0	-65,702	0.0	-65,702	0.0
13	67.7	57.3	0	0.0	-11,119	0.0	-11,119	0.0	-11,119	0.0	-11,119	0.0
14	69.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	17.5	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	29.7	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	31.1	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	28.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	25.8	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	21.9	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	17.1	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	13.7	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	9.4	0	0.0	0	0.0	0	0.0	0	0.0
24	54.5	52.7	0	5.6	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SZ SYSTEMS

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	0	0.0	0	0.0	-63,680	0.0	-63,680	0.0	-63,680	0.0
2	49.4	47.3	0	0.0	0	0.0	-134,209	0.0	-134,209	0.0	-134,209	0.0
3	47.2	45.3	0	0.0	0	0.0	-172,075	0.0	-172,075	0.0	-172,075	0.0
4	45.3	43.4	0	0.0	0	0.0	-193,311	0.0	-193,311	0.0	-193,311	0.0
5	43.9	42.2	0	0.0	0	0.0	-230,207	0.0	-230,207	0.0	-230,207	0.0
6	43.0	41.4	0	0.0	0	0.0	-250,648	0.0	-250,648	0.0	-250,648	0.0
7	42.7	41.2	-46,492	0.0	-149,798	0.0	-284,152	0.0	-284,152	0.0	-284,152	0.0
8	43.5	42.0	-167,573	0.0	-298,050	0.0	-298,050	0.0	-298,050	0.0	-298,050	0.0
9	45.9	44.0	-124,469	0.0	-275,937	0.0	-275,937	0.0	-275,937	0.0	-275,937	0.0
10	49.4	46.6	-64,843	0.0	-250,866	0.0	-250,866	0.0	-250,866	0.0	-250,866	0.0
11	53.8	48.6	0	0.0	-208,315	0.0	-208,315	0.0	-208,315	0.0	-208,315	0.0
12	58.4	50.6	0	0.0	-155,523	0.0	-155,523	0.0	-155,523	0.0	-155,523	0.0
13	62.8	52.6	0	0.0	-101,789	0.0	-101,789	0.0	-101,789	0.0	-101,789	0.0
14	66.3	54.5	0	0.0	-34,795	0.0	-34,795	0.0	-34,795	0.0	-34,795	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	24.1	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	19.9	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	16.3	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	12.8	0	0.0	0	0.0	0	0.0	0	0.0
22	60.2	56.1	0	8.6	0	0.0	0	0.0	0	0.0	0	0.0
23	57.5	54.0	0	4.5	0	0.0	0	0.0	0	0.0	0	0.0
24	54.7	51.7	0	0.9	0	0.0	0	0.0	0	0.0	0	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-26,159	0.0	0	0.0	-230,660	0.0	-230,660	0.0	-230,660	0.0
2	43.2	41.1	-112,512	0.0	0	0.0	-266,305	0.0	-266,305	0.0	-266,305	0.0
3	41.8	39.8	-139,042	0.0	0	0.0	-287,969	0.0	-287,969	0.0	-287,969	0.0
4	40.7	38.7	-175,289	0.0	-49,806	0.0	-309,116	0.0	-309,116	0.0	-309,116	0.0
5	40.1	38.4	-197,439	0.0	-329,845	0.0	-329,842	0.0	-329,842	0.0	-329,842	0.0
6	39.9	38.4	-218,985	0.0	-363,581	0.0	-363,581	0.0	-363,581	0.0	-363,581	0.0
7	40.5	39.0	-237,295	0.0	-383,679	0.0	-383,679	0.0	-383,679	0.0	-383,679	0.0
8	42.2	40.7	-244,035	0.0	-387,121	0.0	-387,121	0.0	-387,121	0.0	-387,121	0.0
9	44.9	43.4	-220,066	0.0	-365,732	0.0	-365,732	0.0	-365,732	0.0	-365,732	0.0
10	48.2	45.8	-158,195	0.0	-339,309	0.0	-339,309	0.0	-339,309	0.0	-339,309	0.0
11	51.7	48.3	-83,210	0.0	-294,779	0.0	-294,779	0.0	-294,779	0.0	-294,779	0.0
12	55.0	50.7	-12,400	0.0	-239,932	0.0	-239,932	0.0	-239,932	0.0	-239,932	0.0
13	57.7	52.0	0	0.0	-187,561	0.0	-187,561	0.0	-187,561	0.0	-187,561	0.0
14	59.5	52.6	0	0.0	-132,902	0.0	-132,902	0.0	-132,902	0.0	-132,902	0.0
15	60.1	52.7	0	0.0	-93,466	0.0	-93,466	0.0	-93,466	0.0	-93,466	0.0
16	59.9	52.6	0	0.0	-51,565	0.0	-51,565	0.0	-51,565	0.0	-51,565	0.0
17	59.2	52.1	0	0.0	-48,890	0.0	-48,890	0.0	-48,890	0.0	-48,890	0.0
18	58.2	51.8	0	0.0	-61,268	0.0	-61,268	0.0	-61,268	0.0	-61,268	0.0
19	56.8	52.2	0	0.0	-65,595	0.0	-65,595	0.0	-65,595	0.0	-65,595	0.0
20	55.0	51.4	0	0.0	-97,340	0.0	-97,340	0.0	-97,340	0.0	-97,340	0.0
21	53.1	50.1	0	0.0	-112,776	0.0	-112,776	0.0	-112,776	0.0	-112,776	0.0
22	51.0	48.1	0	0.0	-142,260	0.0	-142,260	0.0	-142,260	0.0	-142,260	0.0
23	48.9	46.2	0	0.0	-180,829	0.0	-180,829	0.0	-180,829	0.0	-180,829	0.0
24	46.9	44.1	0	0.0	-204,855	0.0	-204,855	0.0	-204,855	0.0	-204,855	0.0

01 Card - Job Information

 Project: ALLEN HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29813 (1 BUILDING)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect

 AUGUSTA

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings

 APR OCT

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room

 CLTD-CLF TETD-TA1 OAHIGH ACTUAL ACTUAL MED-RCR NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	ALLEN HALL_OFFICES

-----CARD 20-- General Room Parameters -----

	Zone										
Room	Reference	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Number	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
							Resistance	Height	Multiplier	Zone	

 1 1 BLOCK 315.5 123.5 3 0 11.6 2

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag		Average	Floor
1		50		CLGCONST				HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Constuc	Type	Direction	Tilt	Alpha	Reflectance Multiplier
1	1	338.5	12		196	0				
1	2	108.5	12		196	90				
1	3	338.5	12		196	180				
1	4	108.5	12		196	270				
1	5	55	12		196	180				
1	6	52	12		196	270				
1	7	55	12		196	0				
1	8	52	12		196	90				
1	9	55	12		196	180				
1	10	52	12		196	270				
1	11	55	12		196	0				
1	12	52	12		196	90				

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of	U-Value	Coefficient	Shading	Shading	Solar to	Transmittance	Visible
				Windows			Type	Type	Ret. Air		Reflectance
1	1	2.5	5.5	34	1.03	.82					
1	2	2.5	5.5	8	1.03	.82					
1	3	2.5	5.5	34	1.03	.82					
1	4	2.5	5.5	8	1.03	.82					
1	5	11.5	10	1	1.03	.82					
1	6	4.2	10	1	1.03	.82					
1	7	11.5	10	1	1.03	.82					
1	8	4.2	10	1	1.03	.82					
1	9	11.5	10	1	1.03	.82					
1	10	4.2	10	1	1.03	.82					
1	11	11.5	10	1	1.03	.82					
1	12	4.2	10	1	1.03	.82					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	FGHEAT	FGHEAT						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	362	PEOPLE	255	325	1.7	WATT-SF	ASHRAE2				

-----CARD 28-- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	75	KW	FGHEAT						

-----CARD 29-- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	----Cooling----		----Heating----		----Cooling----		----Heating----		Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	----Cooling----		----Heating----		----Cooling----		----Heating----		Value	Units
1	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	SZ SYSTEMS

-----CARD 40-- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----							
System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	SZ						

System

-----CARD 42--- Fan SP and Duct Parameters:

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

FGHEAT SCHD FOR HEAT LOAD CALCS

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

System:

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

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*****  
*****  
**                                     **  
**          TRACE  600  ANALYSIS          **  
**                                     **  
**          by          **  
**                                     **  
*****  
*****
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ENERGY STUDY-HAZEN HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29815 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 16:54:13 8/19/94
Dataset Name: FGTPS24 .TM

System 1 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK *****						CLG SPACE PEAK		***** HEATING COIL PEAK *****				
Peaked at Time ==)		Mo/Hr: 8/16		*		Mo/Hr: 6/18		*	Mo/Hr: 13/ 1			
Outside Air ==)		OADB/WB/HR: 96/ 76/105.0		*		OADB: 96		*	OADB: 23			
				*				*				
	Space	Ret. Air	Ret. Air	Net	Perct	*	Space	Perct	*	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	110,921	0		110,921	11.05	*	141,914	24.25	*	-91,755	-91,755	7.14
Glass Solar	121,770	0		121,770	12.13	*	92,070	15.73	*	0	0	0.00
Glass Cond	59,652	0		59,652	5.94	*	63,017	10.77	*	-150,508	-150,508	11.72
Wall Cond	208,300	0		208,300	20.75	*	238,175	40.70	*	-373,446	-373,446	29.08
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	84,915			84,915	8.46	*	50,041	8.55	*	-135,327	-135,327	10.54
Sub Total==)	585,559	0		585,559	58.34	*	585,218	100.00	*	-751,036	-751,036	58.48
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	418,209	41.66	*	0	0.00	*	0	-533,192	41.52
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==)	585,559	0	0	1,003,768	100.00	*	585,218	100.00	*	-751,036	-1,284,228	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity (Tons)	Sens Cap. (Mbh)	Coil Airfl (cfm)	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
				Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	58,014	
Main Clg	83.6	1,003.8	801.4	58,014	78.9	68.1	86.6	65.9	63.1	82.6	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	29,007
Totals	83.6	1,003.8									Wall	27,107

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			-----ENGINEERING CHECKS-----		-----TEMPERATURES (F)-----		
	Capacity (Mbh)	Coil Airfl (cfm)	Ent Deg F	Lvg Deg F	Type	Cooling	Heating	Clg % OA		Type	Clg	Htg
Main Htg	-1,284.2	58,014	59.7	79.7	Vent	10,680	10,680	Clg Cfm/Sqft	1.00	SADB	65.9	79.7
Aux Htg	0.0	0	0.0	0.0	Infil	2,169	2,711	Clg Cfm/Ton	693.56	Plenum	75.0	68.0
Preheat	-398.5	58,014	59.7	65.9	Supply	58,014	58,014	Clg Sqft/Ton	693.56	Return	75.0	68.0
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Sqft	17.30	Ret/OA	78.9	59.7
Humidif	0.0	0	0.0	0.0	Return	58,014	58,014	No. People	712	Runarnd	75.0	68.0
Opt Vent	0.0	0	0.0	0.0	Exhaust	10,680	10,680	Htg % OA	18.4	Fn MtrTD	0.0	0.0
Total	-1,284.2				Rm Exh	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0
					Auxil	0	0	Htg Btuh/Sqft	-22.14	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE

January			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	33.4	31.1	-983,380	0.0		-789,453	0.0		-789,453	0.0		-789,453	0.0		-789,453	0.0	
2	32.9	30.7	-924,977	0.0		-810,912	0.0		-810,912	0.0		-810,912	0.0		-810,912	0.0	
3	33.1	31.3	-883,327	0.0		-840,416	0.0		-840,416	0.0		-840,416	0.0		-840,416	0.0	
4	33.9	32.1	-802,246	0.0		-841,828	0.0		-841,828	0.0		-841,828	0.0		-841,828	0.0	
5	35.2	33.5	-685,349	0.0		-846,775	0.0		-846,775	0.0		-846,775	0.0		-846,775	0.0	
6	37.0	35.4	-695,956	0.0		-830,042	0.0		-830,042	0.0		-830,042	0.0		-830,042	0.0	
7	39.0	37.6	-697,178	0.0		-818,486	0.0		-818,486	0.0		-818,486	0.0		-818,486	0.0	
8	41.3	40.1	-684,088	0.0		-792,246	0.0		-792,246	0.0		-792,246	0.0		-792,246	0.0	
9	43.7	42.5	-615,028	0.0		-745,992	0.0		-745,992	0.0		-745,992	0.0		-745,992	0.0	
10	46.1	44.0	-513,460	0.0		-690,159	0.0		-690,159	0.0		-690,159	0.0		-690,159	0.0	
11	48.4	45.0	-402,777	0.0		-621,816	0.0		-621,816	0.0		-621,816	0.0		-621,816	0.0	
12	50.5	45.6	-273,261	0.0		-556,240	0.0		-556,240	0.0		-556,240	0.0		-556,240	0.0	
13	52.2	46.1	-171,507	0.0		-487,034	0.0		-487,034	0.0		-487,034	0.0		-487,034	0.0	
14	53.5	46.4	-78,142	0.0		-424,942	0.0		-424,942	0.0		-424,942	0.0		-424,942	0.0	
15	54.3	46.3	-10,844	0.0		-379,364	0.0		-379,364	0.0		-379,364	0.0		-379,364	0.0	
16	54.6	46.1	0	0.0		-343,909	0.0		-343,909	0.0		-343,909	0.0		-343,909	0.0	
17	54.0	45.9	0	0.0		-334,426	0.0		-334,426	0.0		-334,426	0.0		-334,426	0.0	
18	52.5	45.0	-35,012	0.0		-355,157	0.0		-355,157	0.0		-355,157	0.0		-355,157	0.0	
19	50.1	44.8	-137,019	0.0		-397,215	0.0		-397,215	0.0		-397,215	0.0		-397,215	0.0	
20	47.1	43.3	-218,303	0.0		-461,700	0.0		-461,700	0.0		-461,700	0.0		-461,700	0.0	
21	43.7	40.4	-290,402	0.0		-529,770	0.0		-529,770	0.0		-529,770	0.0		-529,770	0.0	
22	40.4	37.3	-367,325	0.0		-610,705	0.0		-610,705	0.0		-610,705	0.0		-610,705	0.0	
23	37.3	34.9	-422,847	0.0		-669,393	0.0		-669,393	0.0		-669,393	0.0		-669,393	0.0	
24	34.9	32.6	-481,760	0.0		-735,459	0.0		-735,459	0.0		-735,459	0.0		-735,459	0.0	

February			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	41.7	38.6	-500,861	0.0		-636,950	0.0		-636,950	0.0		-636,950	0.0		-636,950	0.0	
2	39.7	37.1	-552,462	0.0		-691,574	0.0		-691,574	0.0		-691,574	0.0		-691,574	0.0	
3	37.8	35.1	-586,621	0.0		-736,885	0.0		-736,885	0.0		-736,885	0.0		-736,885	0.0	
4	36.3	33.8	-628,294	0.0		-769,602	0.0		-769,602	0.0		-769,602	0.0		-769,602	0.0	
5	35.1	32.6	-649,911	0.0		-818,676	0.0		-818,676	0.0		-818,676	0.0		-818,676	0.0	
6	34.4	32.0	-664,067	0.0		-840,873	0.0		-840,873	0.0		-840,873	0.0		-840,873	0.0	
7	34.1	31.9	-666,795	0.0		-864,174	0.0		-864,174	0.0		-864,174	0.0		-864,174	0.0	
8	34.6	32.4	-650,633	0.0		-869,449	0.0		-869,449	0.0		-869,449	0.0		-869,449	0.0	
9	36.0	33.8	-586,418	0.0		-838,831	0.0		-838,831	0.0		-838,831	0.0		-838,831	0.0	
10	38.2	34.7	-494,569	0.0		-800,317	0.0		-800,317	0.0		-800,317	0.0		-800,317	0.0	
11	40.9	36.2	-393,796	0.0		-750,633	0.0		-750,633	0.0		-750,633	0.0		-750,633	0.0	
12	43.9	37.4	-280,855	0.0		-681,466	0.0		-681,466	0.0		-681,466	0.0		-681,466	0.0	
13	46.9	39.4	-171,462	0.0		-583,910	0.0		-583,910	0.0		-583,910	0.0		-583,910	0.0	
14	49.7	41.4	-80,584	0.0		-505,646	0.0		-505,646	0.0		-505,646	0.0		-505,646	0.0	
15	51.8	42.8	-23,073	0.0		-439,446	0.0		-439,446	0.0		-439,446	0.0		-439,446	0.0	
16	53.2	43.9	0	0.0		-399,473	0.0		-399,473	0.0		-399,473	0.0		-399,473	0.0	
17	53.7	44.2	0	0.0		-384,205	0.0		-384,205	0.0		-384,205	0.0		-384,205	0.0	
18	53.4	44.4	-40,426	0.0		-371,117	0.0		-371,117	0.0		-371,117	0.0		-371,117	0.0	
19	52.7	44.4	-118,881	0.0		-398,492	0.0		-398,492	0.0		-398,492	0.0		-398,492	0.0	
20	51.5	45.2	-187,085	0.0		-426,050	0.0		-426,050	0.0		-426,050	0.0		-426,050	0.0	
21	50.0	44.6	-268,698	0.0		-456,756	0.0		-456,756	0.0		-456,756	0.0		-456,756	0.0	
22	48.1	43.3	-333,617	0.0		-505,966	0.0		-505,966	0.0		-505,966	0.0		-505,966	0.0	
23	46.1	41.8	-401,216	0.0		-540,271	0.0		-540,271	0.0		-540,271	0.0		-540,271	0.0	
24	43.9	40.1	-459,300	0.0		-588,478	0.0		-588,478	0.0		-588,478	0.0		-588,478	0.0	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-197,174	0.0	0	0.0	-362,272	0.0	-362,272	0.0	-362,272	0.0
2	48.7	44.6	-252,803	0.0	-250,423	0.0	-416,111	0.0	-416,111	0.0	-416,111	0.0
3	46.6	42.9	-301,036	0.0	-471,061	0.0	-471,061	0.0	-471,061	0.0	-471,061	0.0
4	44.9	41.4	-333,662	0.0	-511,855	0.0	-511,855	0.0	-511,855	0.0	-511,855	0.0
5	43.9	40.8	-368,139	0.0	-553,503	0.0	-553,503	0.0	-553,503	0.0	-553,503	0.0
6	43.5	40.8	-380,369	0.0	-578,016	0.0	-578,016	0.0	-578,016	0.0	-578,016	0.0
7	44.0	41.4	-381,806	0.0	-584,924	0.0	-584,924	0.0	-584,924	0.0	-584,924	0.0
8	45.4	42.7	-340,657	0.0	-577,408	0.0	-577,408	0.0	-577,408	0.0	-577,408	0.0
9	47.7	44.3	-274,713	0.0	-555,377	0.0	-555,377	0.0	-555,377	0.0	-555,377	0.0
10	50.6	45.8	-177,709	0.0	-492,153	0.0	-492,153	0.0	-492,153	0.0	-492,153	0.0
11	53.9	47.4	-67,164	0.0	-406,618	0.0	-406,618	0.0	-406,618	0.0	-406,618	0.0
12	57.4	49.0	0	0.0	-316,539	0.0	-316,539	0.0	-316,539	0.0	-316,539	0.0
13	60.7	50.8	0	0.0	-225,028	0.0	-225,028	0.0	-225,028	0.0	-225,028	0.0
14	63.6	52.7	0	0.0	-134,645	0.0	-134,645	0.0	-134,645	0.0	-134,645	0.0
15	65.9	53.7	0	0.0	-80,813	0.0	-80,813	0.0	-80,813	0.0	-80,813	0.0
16	67.3	54.4	0	0.0	-36,988	0.0	-36,988	0.0	-36,988	0.0	-36,988	0.0
17	67.8	54.6	0	20.9	-12,585	0.0	-12,585	0.0	-12,585	0.0	-12,585	0.0
18	67.4	54.8	0	17.6	-15,487	0.0	-15,487	0.0	-15,487	0.0	-15,487	0.0
19	66.4	55.2	0	11.2	-31,816	0.0	-31,816	0.0	-31,816	0.0	-31,816	0.0
20	64.7	56.0	0	5.2	-68,883	0.0	-68,883	0.0	-68,883	0.0	-68,883	0.0
21	62.5	56.0	0	0.0	-121,226	0.0	-121,226	0.0	-121,226	0.0	-121,226	0.0
22	60.0	54.1	0	0.0	-171,644	0.0	-171,644	0.0	-171,644	0.0	-171,644	0.0
23	57.1	51.9	0	0.0	-229,890	0.0	-229,890	0.0	-229,890	0.0	-229,890	0.0
24	54.2	49.4	0	0.0	-303,197	0.0	-303,197	0.0	-303,197	0.0	-303,197	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	-61,631	0.0	0	0.0	-184,386	0.0	-184,386	0.0	-184,386	0.0
5	54.2	51.4	-102,462	0.0	-204,150	0.0	-294,818	0.0	-294,818	0.0	-294,818	0.0
6	53.5	50.9	-114,235	0.0	-321,559	0.0	-321,559	0.0	-321,559	0.0	-321,559	0.0
7	53.2	51.1	-108,143	0.0	-337,744	0.0	-337,744	0.0	-337,744	0.0	-337,744	0.0
8	53.9	51.5	-69,393	0.0	-343,554	0.0	-343,554	0.0	-343,554	0.0	-343,554	0.0
9	55.9	52.1	-11,981	0.0	-318,244	0.0	-318,244	0.0	-318,244	0.0	-318,244	0.0
10	58.9	53.2	0	0.0	-258,139	0.0	-258,139	0.0	-258,139	0.0	-258,139	0.0
11	62.6	55.2	0	0.0	-175,547	0.0	-175,547	0.0	-175,547	0.0	-175,547	0.0
12	66.5	57.3	0	0.0	-84,716	0.0	-84,716	0.0	-84,716	0.0	-84,716	0.0
13	70.2	59.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	15.2	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	36.9	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	38.7	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	37.7	0	0.0	0	0.0	0	0.0	0	0.0
18	74.9	61.7	0	34.9	0	0.0	0	0.0	0	0.0	0	0.0
19	73.7	62.0	0	29.6	0	0.0	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	23.9	0	0.0	0	0.0	0	0.0	0	0.0
21	70.2	63.3	0	17.9	0	0.0	0	0.0	0	0.0	0	0.0
22	68.0	62.5	0	11.4	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	6.5	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
2	65.7	61.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
3	63.6	59.7		0		3.6		0		0.0		0		0.0		0		0.0		0		0.0
4	61.8	58.4		0		2.6		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1		0		0.8		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
7	59.4	56.5		0		0.7		0		0.0		0		0.0		0		0.0		0		0.0
8	60.1	56.3		0		4.6		0		0.0		0		0.0		0		0.0		0		0.0
9	62.4	56.3		0		9.4		-140,065		0.0		-140,065		0.0		-140,065		0.0		-140,065		0.0
10	65.7	57.2		0		16.4		-80,490		0.0		-80,490		0.0		-80,490		0.0		-80,490		0.0
11	69.9	58.9		0		25.5		0		0.0		0		0.0		0		0.0		0		0.0
12	74.3	60.9		0		34.7		0		0.0		0		0.0		0		0.0		0		0.0
13	78.5	63.7		0		42.6		0		0.0		0		0.0		0		0.0		0		0.0
14	81.9	65.3		0		49.1		0		0.0		0		0.0		0		0.0		0		0.0
15	84.1	66.9		0		54.6		0		0.0		0		0.0		0		0.0		0		0.0
16	84.9	67.1		0		55.7		0		17.0		0		17.0		0		17.0		0		17.0
17	84.6	67.3		0		55.1		0		28.6		0		28.6		0		28.6		0		28.6
18	83.8	67.1		0		53.0		0		28.6		0		28.6		0		28.6		0		28.6
19	82.4	67.5		0		48.2		0		27.8		0		27.8		0		27.8		0		27.8
20	80.6	68.9		0		41.9		0		26.4		0		26.4		0		26.4		0		26.4
21	78.5	71.0		0		35.8		0		27.1		0		27.1		0		27.1		0		27.1
22	76.1	69.9		0		29.8		0		21.6		0		21.6		0		21.6		0		21.6
23	73.4	68.0		0		23.6		0		13.4		0		13.4		0		13.4		0		13.4
24	70.8	65.5		0		19.2		0		6.2		0		6.2		0		6.2		0		6.2

June	----- Design -----				----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		40.4		0		21.1		0		24.7		0		24.7
2	72.6	68.4		0		33.1		0		16.6		0		17.0		0		17.0
3	70.9	67.3		0		29.7		0		9.8		0		9.8		0		9.8
4	69.6	66.5		0		26.9		0		4.9		0		4.9		0		4.9
5	68.7	65.8		0		23.6		0		0.0		0		0.0		0		0.0
6	68.5	65.7		0		22.4		0		0.0		0		0.0		0		0.0
7	69.0	66.3		0		25.3		0		0.0		0		0.0		0		0.0
8	70.6	66.9		0		30.3		0		0.0		0		0.0		0		0.0
9	73.0	67.7		0		36.3		0		0.0		0		0.0		0		0.0
10	76.1	68.1		0		43.0		0		11.2		0		11.2		0		11.2
11	79.5	69.1		0		50.7		0		20.8		0		20.8		0		20.8
12	82.9	70.1		0		59.5		0		28.7		0		28.7		0		28.7
13	86.0	71.0		0		67.1		0		37.0		0		37.0		0		37.0
14	88.4	72.5		0		73.2		0		45.6		0		45.6		0		45.6
15	90.0	74.0		0		77.8		0		54.8		0		54.8		0		54.8
16	90.5	73.7		0		79.2		0		55.0		0		55.0		0		55.0
17	90.3	74.2		0		79.3		0		57.4		0		57.4		0		57.4
18	89.4	73.9		0		74.9		0		58.1		0		58.1		0		58.1
19	88.1	74.5		0		69.7		0		56.9		0		56.9		0		56.9
20	86.4	75.3		0		64.1		0		53.9		0		53.9		0		53.9
21	84.3	76.5		0		60.5		0		55.8		0		55.8		0		55.8
22	81.9	75.7		0		55.7		0		51.2		0		51.2		0		51.2
23	79.5	74.0		0		50.3		0		42.8		0		42.8		0		42.8
24	77.0	72.1		0		44.8		0		33.4		0		33.4		0		33.4

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE

July	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton		
1	73.7	70.5		0		43.3		0		15.3		0		18.3		0		18.3		
2	72.4	69.4		0		35.3		0		12.4		0		12.9		0		12.9		
3	71.3	68.4		0		32.3		0		7.3		0		7.3		0		7.3		
4	70.5	67.7		0		29.7		0		3.0		0		3.0		0		3.0		
5	70.0	67.4		0		27.6		0		0.0		0		0.0		0		0.0		
6	69.9	67.5		0		26.2		0		0.0		0		0.0		0		0.0		
7	70.3	68.0		0		28.7		0		0.0		0		0.0		0		0.0		
8	71.7	69.0		0		32.7		0		0.0		0		0.0		0		0.0		
9	73.7	69.5		0		36.7		0		0.0		0		0.0		0		0.0		
10	76.2	70.6		0		42.7		0		12.3		0		12.3		0		12.3		
11	78.9	71.8		0		49.3		0		24.2		0		24.2		0		24.2		
12	81.4	73.0		0		59.9		0		33.0		0		33.0		0		33.0		
13	83.4	74.4		0		66.8		0		42.0		0		42.0		0		42.0		
14	84.8	74.8		0		72.7		0		46.9		0		46.9		0		46.9		
15	85.2	75.0		0		77.3		0		50.5		0		50.5		0		50.5		
16	85.1	75.0		0		78.8		0		52.2		0		52.2		0		52.2		
17	84.6	74.7		0		79.2		0		52.0		0		52.0		0		52.0		
18	83.8	74.6		0		75.1		0		52.1		0		52.1		0		52.1		
19	82.7	74.6		0		70.7		0		52.0		0		52.0		0		52.0		
20	81.4	74.4		0		65.8		0		48.8		0		48.8		0		48.8		
21	79.9	74.9		0		60.5		0		46.8		0		46.8		0		46.8		
22	78.4	74.0		0		55.4		0		40.0		0		40.0		0		40.0		
23	76.8	72.7		0		50.8		0		31.3		0		31.3		0		31.3		
24	75.2	71.6		0		45.5		0		25.2		0		25.2		0		25.2		

August			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0		42.8		0		21.5		0		25.8		0		25.8		0		25.8
2	73.2	70.3		0		33.7		0		16.0		0		16.4		0		16.4		0		16.4
3	71.7	68.9		0		30.7		0		10.5		0		10.5		0		10.5		0		10.5
4	70.4	67.8		0		26.8		0		4.9		0		4.9		0		4.9		0		4.9
5	69.5	66.8		0		23.4		0		0.0		0		0.0		0		0.0		0		0.0
6	68.9	66.4		0		22.5		0		0.0		0		0.0		0		0.0		0		0.0
7	68.7	66.4		0		24.6		0		0.0		0		0.0		0		0.0		0		0.0
8	69.2	66.8		0		28.2		0		0.0		0		0.0		0		0.0		0		0.0
9	70.8	67.7		0		33.9		0		0.0		0		0.0		0		0.0		0		0.0
10	73.2	67.7		0		41.3		0		0.0		0		0.0		0		0.0		0		0.0
11	76.2	68.8		0		50.3		0		7.5		0		7.5		0		7.5		0		7.5
12	79.3	70.3		0		58.1		0		24.8		0		24.8		0		24.8		0		24.8
13	82.3	72.2		0		68.5		0		35.4		0		35.4		0		35.4		0		35.4
14	84.7	73.7		0		76.5		0		44.2		0		44.2		0		44.2		0		44.2
15	86.3	74.6		0		80.7		0		52.5		0		52.5		0		52.5		0		52.5
16	86.8	75.1		0		83.2		0		55.5		0		55.5		0		55.5		0		55.5
17	86.6	75.1		0		79.2		0		56.1		0		56.1		0		56.1		0		56.1
18	86.0	75.3		0		76.1		0		59.4		0		59.4		0		59.4		0		59.4
19	85.1	76.0		0		71.7		0		57.9		0		57.9		0		57.9		0		57.9
20	83.8	76.8		0		66.5		0		56.6		0		56.6		0		56.6		0		56.6
21	82.3	77.2		0		63.7		0		54.6		0		54.6		0		54.6		0		54.6
22	80.6	76.3		0		56.4		0		51.3		0		51.3		0		51.3		0		51.3
23	78.7	75.3		0		49.4		0		42.4		0		42.4		0		42.4		0		42.4
24	76.8	73.7		0		45.4		0		33.9		0		33.9		0		33.9		0		33.9

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	25.8	0	2.6	0	3.4	0	3.4	0	3.4
2	67.6	65.0	0	18.3	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	12.0	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	8.9	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	5.9	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	4.6	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	8.1	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	14.2	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	23.1	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	31.4	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	41.1	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	50.8	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	59.4	0	0.0	0	0.0	0	0.0	0	0.0
15	83.0	70.0	0	64.0	0	17.9	0	17.9	0	17.9	0	17.9
16	83.7	70.5	0	65.7	0	38.3	0	38.3	0	38.3	0	38.3
17	83.4	70.5	0	62.9	0	37.7	0	37.7	0	37.7	0	37.7
18	82.8	70.9	0	58.5	0	38.4	0	38.4	0	38.4	0	38.4
19	81.6	72.7	0	54.1	0	38.5	0	38.5	0	38.5	0	38.5
20	80.1	74.7	0	51.4	0	39.8	0	39.8	0	39.8	0	39.8
21	78.3	74.1	0	45.2	0	35.7	0	35.7	0	35.7	0	35.7
22	76.3	72.4	0	37.3	0	29.3	0	29.3	0	29.3	0	29.3
23	74.1	70.7	0	28.7	0	20.2	0	20.2	0	20.2	0	20.2
24	71.8	68.9	0	24.0	0	12.1	0	12.1	0	12.1	0	12.1

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-305,514	0.0	-305,514	0.0	-305,514	0.0
2	50.1	48.6	0	0.0	0	0.0	-364,187	0.0	-364,187	0.0	-364,187	0.0
3	48.4	46.9	0	0.0	-377,226	0.0	-404,117	0.0	-404,117	0.0	-404,117	0.0
4	47.1	45.8	0	0.0	-453,213	0.0	-453,213	0.0	-453,213	0.0	-453,213	0.0
5	46.3	44.8	-248,293	0.0	-481,685	0.0	-481,685	0.0	-481,685	0.0	-481,685	0.0
6	46.0	44.5	-308,662	0.0	-520,959	0.0	-520,959	0.0	-520,959	0.0	-520,959	0.0
7	46.8	45.3	-306,663	0.0	-524,240	0.0	-524,240	0.0	-524,240	0.0	-524,240	0.0
8	48.9	47.5	-270,562	0.0	-492,904	0.0	-492,904	0.0	-492,904	0.0	-492,904	0.0
9	52.2	49.9	-192,808	0.0	-437,304	0.0	-437,304	0.0	-437,304	0.0	-437,304	0.0
10	56.2	52.5	-88,411	0.0	-366,476	0.0	-366,476	0.0	-366,476	0.0	-366,476	0.0
11	60.4	54.4	0	0.0	-258,114	0.0	-258,114	0.0	-258,114	0.0	-258,114	0.0
12	64.4	56.0	0	0.0	-145,463	0.0	-145,463	0.0	-145,463	0.0	-145,463	0.0
13	67.7	57.3	0	0.0	-54,468	0.0	-54,468	0.0	-54,468	0.0	-54,468	0.0
14	69.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	9.5	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	31.4	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	30.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	23.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	17.3	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	10.2	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	3.9	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23	57.0	55.1	0	0.0	-191,492	0.0	-191,492	0.0	-191,492	0.0	-191,492	0.0
24	54.5	52.7	0	0.0	-255,163	0.0	-255,163	0.0	-255,163	0.0	-255,163	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE

November		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0 49.2	-216,873	0.0	0	0.0	-326,637	0.0	-326,637	0.0	-326,637	0.0
2	49.4 47.3	-270,369	0.0	-217,993	0.0	-390,229	0.0	-390,229	0.0	-390,229	0.0
3	47.2 45.3	-308,561	0.0	-438,019	0.0	-438,019	0.0	-438,019	0.0	-438,019	0.0
4	45.3 43.4	-352,857	0.0	-491,476	0.0	-491,476	0.0	-491,476	0.0	-491,476	0.0
5	43.9 42.2	-387,035	0.0	-538,485	0.0	-538,485	0.0	-538,485	0.0	-538,485	0.0
6	43.0 41.4	-397,990	0.0	-567,035	0.0	-567,035	0.0	-567,035	0.0	-567,035	0.0
7	42.7 41.2	-396,072	0.0	-587,368	0.0	-587,368	0.0	-587,368	0.0	-587,368	0.0
8	43.5 42.0	-356,505	0.0	-602,177	0.0	-602,177	0.0	-602,177	0.0	-602,177	0.0
9	45.9 44.0	-268,905	0.0	-554,128	0.0	-554,128	0.0	-554,128	0.0	-554,128	0.0
10	49.4 46.6	-168,087	0.0	-490,943	0.0	-490,943	0.0	-490,943	0.0	-490,943	0.0
11	53.8 48.6	-32,236	0.0	-402,123	0.0	-402,123	0.0	-402,123	0.0	-402,123	0.0
12	58.4 50.6	0	0.0	-296,356	0.0	-296,356	0.0	-296,356	0.0	-296,356	0.0
13	62.8 52.6	0	0.0	-183,880	0.0	-183,880	0.0	-183,880	0.0	-183,880	0.0
14	66.3 54.5	0	0.0	-92,273	0.0	-92,273	0.0	-92,273	0.0	-92,273	0.0
15	68.7 55.7	0	0.0	-12,817	0.0	-12,817	0.0	-12,817	0.0	-12,817	0.0
16	69.5 56.1	0	20.4	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2 55.8	0	25.4	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3 57.0	0	19.5	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9 59.4	0	11.6	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0 59.4	0	4.2	-40,068	0.0	-40,068	0.0	-40,068	0.0	-40,068	0.0
21	62.8 58.2	0	0.0	-110,142	0.0	-110,142	0.0	-110,142	0.0	-110,142	0.0
22	60.2 56.1	0	0.0	-165,583	0.0	-165,583	0.0	-165,583	0.0	-165,583	0.0
23	57.5 54.0	0	0.0	-218,238	0.0	-218,238	0.0	-218,238	0.0	-218,238	0.0
24	54.7 51.7	0	0.0	-275,515	0.0	-275,515	0.0	-275,515	0.0	-275,515	0.0

December		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9 42.5	-357,003	0.0	-532,011	0.0	-532,011	0.0	-532,011	0.0	-532,011	0.0
2	43.2 41.1	-392,787	0.0	-574,276	0.0	-574,276	0.0	-574,276	0.0	-574,276	0.0
3	41.8 39.8	-437,996	0.0	-607,735	0.0	-607,735	0.0	-607,735	0.0	-607,735	0.0
4	40.7 38.7	-466,024	0.0	-649,331	0.0	-649,331	0.0	-649,331	0.0	-649,331	0.0
5	40.1 38.4	-500,275	0.0	-673,439	0.0	-673,439	0.0	-673,439	0.0	-673,439	0.0
6	39.9 38.4	-510,742	0.0	-692,794	0.0	-692,794	0.0	-692,794	0.0	-692,794	0.0
7	40.5 39.0	-511,292	0.0	-704,833	0.0	-704,833	0.0	-704,833	0.0	-704,833	0.0
8	42.2 40.7	-489,856	0.0	-697,390	0.0	-697,390	0.0	-697,390	0.0	-697,390	0.0
9	44.9 43.4	-420,476	0.0	-646,003	0.0	-646,003	0.0	-646,003	0.0	-646,003	0.0
10	48.2 45.8	-332,968	0.0	-584,626	0.0	-584,626	0.0	-584,626	0.0	-584,626	0.0
11	51.7 48.3	-213,087	0.0	-502,426	0.0	-502,426	0.0	-502,426	0.0	-502,426	0.0
12	55.0 50.7	-99,614	0.0	-408,544	0.0	-408,544	0.0	-408,544	0.0	-408,544	0.0
13	57.7 52.0	0	0.0	-317,835	0.0	-317,835	0.0	-317,835	0.0	-317,835	0.0
14	59.5 52.6	0	0.0	-249,364	0.0	-249,364	0.0	-249,364	0.0	-249,364	0.0
15	60.1 52.7	0	0.0	-211,617	0.0	-211,617	0.0	-211,617	0.0	-211,617	0.0
16	59.9 52.6	0	0.0	-180,769	0.0	-180,769	0.0	-180,769	0.0	-180,769	0.0
17	59.2 52.1	0	0.0	-190,017	0.0	-190,017	0.0	-190,017	0.0	-190,017	0.0
18	58.2 51.8	0	0.0	-212,026	0.0	-212,026	0.0	-212,026	0.0	-212,026	0.0
19	56.8 52.2	0	0.0	-232,396	0.0	-232,396	0.0	-232,396	0.0	-232,396	0.0
20	55.0 51.4	0	0.0	-281,340	0.0	-281,340	0.0	-281,340	0.0	-281,340	0.0
21	53.1 50.1	0	0.0	-328,003	0.0	-328,003	0.0	-328,003	0.0	-328,003	0.0
22	51.0 48.1	0	0.0	-379,750	0.0	-379,750	0.0	-379,750	0.0	-379,750	0.0
23	48.9 46.2	-172,745	0.0	-428,685	0.0	-428,685	0.0	-428,685	0.0	-428,685	0.0
24	46.9 44.1	-306,591	0.0	-473,131	0.0	-473,131	0.0	-473,131	0.0	-473,131	0.0

Project: ENERGY STUDY-HAZEN HALL
Location: FORT GORDON, GEORGIA
Client: U. S. ARMY CORP OF ENGINEERS
Program User: BON
Comments: BUILDING 29815 (1 BUILDING)

-----CARD 08-- Climatic Information -----								
	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----						
1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----						
Cooling Load Method	Heating Load Method	Ventilation Method	Airflow Input Units	Airflow Output Units	Room Circulation Rate	Put Wall RA Load to Room
CLTD-CLF	TEYD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

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---- Load Alternative ----
Number      Description
1           SCHOOL OFFICES

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-----CARD 20-- General Room Parameters -----												
Zone								Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Room	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Duplicate	Duplicate	Perimeter
Number	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone	Rooms per	Depth
1	1	BLOCK	469.75	61.75	3	0		11.6	2			

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag		Average	Floor
1		50		CLGCONST			HTGCONST			LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Roof	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Equal to Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Constuc Type	Direction	Tilt	Alpha	Reflectance	Multiplier
1	1	469.75	12.75		196	0				
1	2	61.75	12.75		196	90				
1	3	469.75	12.75		196	180				
1	4	61.75	12.75		196	270				

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of Windows	U-Value	Coefficient	Shading Type	Shading Type	Solar to Ret. Air	Transmittance	Visible Reflectance
1	1	2.5	5.5	48	1.03	.82					
1	2	2.5	5.5	4	1.03	.82					
1	3	2.5	5.5	52	1.03	.82					
1	4	2.5	5.5	4	1.03	.82					

-----CARD 26-- Schedules -----

Room	People	Lights	Ventilation	Infiltration	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	Value	Value	Value	Value	Minimum	Fans	Fan	Fan	Exhaust	Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Ballast	Percent	--- Daylighting ---
Number	Value	Units	Sensible	Latent	Value	Units	Fixture Type	Factor	Lights to Ret. Air	Reference Point 1
1	356	PEOPLE	255	325	2.3	WATT-SF	SUSFLUOR			Reference Point 2

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	60.2	KW	FGHEAT						

Room Number	Ventilation-----				Infiltration-----				Reheat Minimum--	
	Cooling-----		Heating-----		Cooling-----		Heating-----		Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

		-----Main-----				-----Auxiliary-----					
Room Number	----Cooling----		----Heating----		----Cooling----		----Heating----		--Room Exhaust--		
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units	
1	1	CFM-SF	1	CFM-SF							

Number	Description
1	SINGLE ZONE

System		-----OPTIONAL VENTILATION SYSTEM-----					Fan
Set	System	Deck	Cooling	Heating	Cooling	Heating	Static
Number	Type	Location	SADBvh	SADBvh	Schedule	Schedule	Pressure
1	SZ						

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 75
24

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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**          T R A C E    6 0 0    A N A L Y S I S          **  
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**          by          **  
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ENERGY STUDY- FISHER HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29816 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 17:18: 3 8/19/94
Dataset Name: FGTPS25 .TM

AIRFLOW - ALTERNATIVE 1
SCHOOL_OFFICES

----- S Y S T E M S U M M A R Y -----
(Design Airflow Quantities)

System Number	System Type	----- Main -----					Auxil. Supply Airflow (Cfm)	Room Exhaust Airflow (Cfm)
		Outside Airflow (Cfm)	Cooling Airflow (Cfm)	Heating Airflow (Cfm)	Return Airflow (Cfm)	Exhaust Airflow (Cfm)		
1 FC		4,110	24,938	24,938	26,207	5,378	0	0
Totals		4,110	24,938	24,938	26,207	5,378	0	0

CAPACITY - ALTERNATIVE 1
SCHOOL_OFFICES

----- S Y S T E M S U M M A R Y -----
(Design Capacity Quantities)

System Number	System Type	----- Cooling -----					----- Heating -----					
		Main Sys. Capacity (Tons)	Aux. Sys. Capacity (Tons)	Opt. Vent Capacity (Tons)	Cooling Totals (Tons)	Main Sys. Capacity (Btuh)	Aux. Sys. Capacity (Btuh)	Preheat Capacity (Btuh)	Reheat Capacity (Btuh)	Humidif. Capacity (Btuh)	Opt. Vent Capacity (Btuh)	Heating Totals (Btuh)
1 FC		40.5	0.0	0.0	40.5	-550,674	0	-69,158	0	0	0	-550,674
Totals		40.5	0.0	0.0	40.5	-550,674	0	-69,158	0	0	0	-550,674

The building peaked at hour 17 month 7 with a capacity of 40.5 tons

ENGINEERING CHECKS - ALTERNATIVE 1
SCHOOL_OFFICES

----- E N G I N E E R I N G C H E C K S -----

System Number	Main/ Auxiliary	System Type	Percent Outside Air	----- Cooling -----				--- Heating ---		Floor Area Sq Ft
				Cfm/ Sq Ft	Cfm/ Ton	Sq Ft /Ton	Btuh/ Sq Ft	Cfm/ Sq Ft	Btuh/ Sq Ft	
1	Main	FC	16.48	1.00	616.4	616.4	19.47	1.00	-22.08	24,938

System 1 Block FC - FAN COIL

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==> Mo/Hr: 8/16 * Mo/Hr: 6/18 * Mo/Hr: 13/ 1
Outside Air ==> OADB/WB/HR: 96/ 76/105.0 * OADB: 96 * OADB: 23

	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct		Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot		Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)		(Btuh)	(Btuh)	(%)
Envelope Loads												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	47,681	0		47,681	9.82	*	61,004	18.50	*	-39,442	-39,442	7.16
Glass Solar	73,920	0		73,920	15.23	*	80,520	24.42	*	0	0	0.00
Glass Cond	26,512	0		26,512	5.46	*	28,008	8.49	*	-66,892	-66,892	12.15
Wall Cond	111,357	0		111,357	22.94	*	136,754	41.48	*	-175,827	-175,827	31.93
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	44,758			44,758	9.22	*	23,416	7.10	*	-63,324	-63,324	11.50
Sub Total==>	304,228	0		304,228	62.66	*	329,702	100.00	*	-345,485	-345,485	62.74
Internal Loads												
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	181,285	37.34	*	0	0.00	*	0	-205,189	37.26
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
Grand Total==>	304,228	0	0	485,513	100.00	*	329,702	100.00	*	-345,485	-550,674	100.00

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(Mbh)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	24,938	
Main Clg	40.5	485.5	379.4	78.5	66.7	79.9	63.1	60.8	76.6	Part	0	
Aux Clg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0	
Opt Vent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	12,469	0 0
Totals	40.5	485.5								Wall	12,684	1,320 10

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	--ENGINEERING CHECKS--			--TEMPERATURES (F)---		
	(Mbh)	(cfm)	Deg F	Deg F				Clg % OA	16.5	Type	Clg	Htg	
Main Htg	-550.7	24,938	60.6	80.5	Vent	4,110	4,110	Clg Cfm/Sqft	1.00	SADB	63.1	80.5	
Aux Htg	0.0	0	0.0	0.0	Infil	1,015	1,268	Clg Cfm/Ton	616.38	Plenum	75.0	68.0	
Preheat	-69.2	24,938	60.6	63.1	Supply	24,938	24,938	Clg Sqft/Ton	616.38	Return	75.0	68.0	
Reheat	0.0	0	0.0	0.0	Mincfm	0	0	Clg Btuh/Sqft	19.47	Ret/OA	78.5	60.6	
Humidif	0.0	0	0.0	0.0	Return	24,938	24,938	No. People	274	Runarnd	75.0	68.0	
Opt Vent	0.0	0	0.0	0.0	Exhaust	4,110	4,110	Htg % OA	16.5	Fn MtrTD	0.0	0.0	
Total	-550.7				Rm Exh	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0	
					Auxil	0	0	Htg Btuh/Sqft	-22.08	Fn Frict	0.0	0.0	

MAIN SYSTEM COOLING - ALTERNATIVE 1
SCHOOL_OFFICES

----- P E A K C O O L I N G L O A D S -----
(Main System)

Room Number	Description	Peak Time Mo/Hr	Space						Coil								
			OA	Rm	Supp.	Space	Space	Space	Peak	OA	Rm	Supp.	Coil	Coil	Coil		
			Cond.	Dry	Dry	Air	Sens.	Lat.	Time	Cond.	Dry	Dry	Air	Sens.	Lat.		
			DB/WB	Blb	Bulb	Flow	Load	Load	Mo/Hr	DB/WB	Blb	Bulb	Flow	Load	Load		
			(F)	(F)	(F)	(Cfm)	(Btuh)	(Btuh)				(F)	(F)	(F)	(Cfm)	(Btuh)	(Btuh)
1	BLOCK	6/18	96	73	75	63.1	24,938	329,702	6,138	8/16	96	76	75	64.8	24,938	379,435	106,079
Zone	1 Total/Ave.		96	73	75	63.1	24,938	329,702	6,138		96	76	75	64.8	24,938	379,435	106,079
Zone	1 Block	6/18	96	73	75	63.1	24,938	329,702	6,138	8/16	96	76	75	64.8	24,938	379,435	106,079
System	1 Total/Ave.		96	73	75	63.1	24,938	329,702	6,138		96	76	75	64.8	24,938	379,435	106,079
System	1 Block	6/18	96	73	75	63.1	24,938	329,702	6,138	8/16	96	76	75	64.8	24,938	379,435	106,079

MAIN SYSTEM HEATING - ALTERNATIVE 1
SCHOOL_OFFICES

----- P E A K H E A T I N G L O A D S -----
(Main System)

Room Number Description		Floor Area (Sq Ft)	Space					Coil								
			Peak Time Mo/Hr	OA Cond. DB/WB (F)	Rm Dry Blb (F)	Supp. Dry Bulb (F)	Space Air Flow (Cfm)	Space Sens. Load (Btuh)	Peak Time Mo/Hr	OA Cond. DB/WB (F)	Rm Dry Blb (F)	Supp. Dry Bulb (F)	Coil Air Flow (Cfm)	Coil Sens. Load (Btuh)		
1	BLOCK	24,938	13/ 1	23	19	68	80.5	24,938	-345,485	13/ 1	23	19	68	80.5	24,938	-550,674
Zone	1 Total/Ave.	24,938		23	19	68	80.5	24,938	-345,485		23	19	68	80.5	24,938	-550,674
Zone	1 Block	24,938	13/ 1	23	19	68	80.5	24,938	-345,485	13/ 1	23	19	68	80.5	24,938	-550,674
System	1 Total/Ave.	24,938		23	19	68	80.5	24,938	-345,485		23	19	68	80.5	24,938	-550,674
System	1 Block	24,938	13/ 1	23	19	68	80.5	24,938	-345,485	13/ 1	23	19	68	80.5	24,938	-550,674

COOLING LOADS AT COIL PEAK - ALTERNATIVE 1
SCHOOL_OFFICES

----- INTERNAL COOLING LOADS -----
(At time of Coil Peak)

Room Number	Description	Lights Room Sensible (Btuh)	Lights Ret. Air Sensible (Btuh)	Lites CLF	People Sensible (Btuh)	People Latent (Btuh)	Peopl CLF	Misc. Space Sensible (Btuh)	Misc. Space Latent (Btuh)	Misc. Ret. Air Sensible (Btuh)	Misc. CLF	Total (Btuh)
1	BLOCK	0	0	0.000	0	0	0.000	0	0	0	0.000	0
Zone	1 Total/Ave.	0	0	0.000	0	0	0.000	0	0	0	0.000	0
Zone	1 Block	0	0	0.000	0	0	0.000	0	0	0	0.000	0
System	1 Total/Ave.	0	0	0.000	0	0	0.000	0	0	0	0.000	0
System	1 Block	0	0	0.000	0	0	0.000	0	0	0	0.000	0

COOLING LOADS AT SPACE PEAK - ALTERNATIVE 1
SCHOOL_OFFICES

----- INTERNAL COOLING LOADS -----
(At time of Space Peak)

Room Number	Description	Lights Room Sensible (Btuh)	Lights Ret. Air Sensible (Btuh)	Lites CLF	People Sensible (Btuh)	People Latent (Btuh)	Peopl CLF	Misc. Space Sensible (Btuh)	Misc. Space Latent (Btuh)	Misc. Ret. Air Sensible (Btuh)	Misc. CLF	Total (Btuh)
1	BLOCK	0	0	0.000	0	0	0.000	0	0	0	0.000	0
Zone	1 Total/Ave.	0	0	0.000	0	0	0.000	0	0	0	0.000	0
Zone	1 Block	0	0	0.000	0	0	0.000	0	0	0	0.000	0
System	1 Total/Ave.	0	0	0.000	0	0	0.000	0	0	0	0.000	0
System	1 Block	0	0	0.000	0	0	0.000	0	0	0	0.000	0

HEATING LOADS AT COIL PEAK - ALTERNATIVE 1
SCHOOL_OFFICES

----- INTERNAL HEATING LOADS -----
(At time of Coil Peak)

Room Number	Description	Lights Room Sensible (Btuh)	Lights Ret. Air Sensible (Btuh)	Lites CLF	People Sensible (Btuh)	Peopl CLF	Misc. Space Sensible (Btuh)	Misc. Ret. Air Sensible (Btuh)	Misc. CLF	Total (Btuh)
1	BLOCK	0	0	0.000	0	0.000	0	0	0.000	0
Zone	1 Total/Ave.	0	0	0.000	0	0.000	0	0	0.000	0
Zone	1 Block	0	0	0.000	0	0.000	0	0	0.000	0
System	1 Total/Ave.	0	0	0.000	0	0.000	0	0	0.000	0
System	1 Block	0	0	0.000	0	0.000	0	0	0.000	0

HEATING LOADS AT SPACE PEAK - ALTERNATIVE 1
SCHOOL_OFFICES

----- INTERNAL HEATING LOADS -----
(At time of Space Peak)

Room Number	Description	Lights Room Sensible (Btuh)	Lights Ret. Air Sensible (Btuh)	Lites CLF	People Sensible (Btuh)	Peopl CLF	Misc. Space Sensible (Btuh)	Misc. Ret. Air Sensible (Btuh)	Misc. CLF	Total (Btuh)
1	BLOCK	0	0	0.000	0	0.000	0	0	0.000	0
Zone	1 Total/Ave.	0	0	0.000	0	0.000	0	0	0.000	0
Zone	1 Block	0	0	0.000	0	0.000	0	0	0.000	0
System	1 Total/Ave.	0	0	0.000	0	0.000	0	0	0.000	0
System	1 Block	0	0	0.000	0	0.000	0	0	0.000	0

COOLING LOADS AT COIL PEAK - ALTERNATIVE 1
SCHOOL OFFICES

----- B U I L D I N G E N V E L O P E C O O L I N G L O A D S -----												
(Roof - Skylight)												
(At time of Coil Peak)												
Room Number	Description	Roof	Roof	Roof	Roof	Skylight	Skylight	Skylt	Skylight	Skylight	Skylight	Skylt
		Return Air Sensible Load (Btuh)	R.A. CLTD (F)	Space Sensible Load (Btuh)	Space CLTD (F)	Return Air Solar (Btuh)	Space Solar (Btuh)	Solar CLF	Return Air Conduction Load (Btuh)	R.A. CLTD (F)	Space Conduction Load (Btuh)	Skylt CLTD (F)
1	BLOCK	0	0.0	47,681	54.4	0	0	0.000	0	0.0	0	0.0
Zone	1 Total/Ave.	0	0.0	47,681	54.4	0	0	0.000	0	0.0	0	0.0
Zone	1 Block	0	0.0	47,681	54.4	0	0	0.000	0	0.0	0	0.0
System	1 Total/Ave.	0	0.0	47,681	54.4	0	0	0.000	0	0.0	0	0.0
System	1 Block	0	0.0	47,681	54.4	0	0	0.000	0	0.0	0	0.0

----- BUILDING ENVELOPE COOLING LOADS -----											
(Wall - Window)											
(At time of Coil Peak)											
Room		Wall	Wall	Wall	Wall	Glass	Glass	Glass	Glass	Glass	Glass
Number	Description	Plenum	Plenm	Space	Space	Space	Return Air	Solar	Space	Space	Return Air
		Load	CLTD	Load	CLTD	Solar	Solar	CLF	Conduction	CLTD	Conduction
		(Btuh)	(F)	(Btuh)	(F)	(Btuh)	(Btuh)		(Btuh)	(F)	(Btuh)
1	BLOCK	0	0.0	111,357	28.5	73,920	0	0.380	26,512	19.5	0
Zone	1 Total/Ave.	0	0.0	111,357	28.5	73,920	0	0.380	26,512	19.5	0
Zone	1 Block	0	0.0	111,357	28.5	73,920	0	0.380	26,512	19.5	0
System	1 Total/Ave.	0	0.0	111,357	28.5	73,920	0	0.380	26,512	19.5	0
System	1 Block	0	0.0	111,357	28.5	73,920	0	0.380	26,512	19.5	0

----- BUILDING ENVELOPE COOLING LOADS -----											
(Exposed Floor - Partitions - Infiltration)											
(At time of Coil Peak)											
Room Number	Description	Exposed Floor Sensible (Btuh)	Expsd Floor CLTD (F)	Partition Sensible (Btuh)	Part. CLTD (F)	Infilt. Airflow (Cfm)	Infilt. Sensible (Btuh)	Infilt. Latent (Btuh)	Plenm Dry B Temp. (F)	Ceiling Sensible Load (Btuh)	Envelope Total (Btuh)
1	BLOCK	0	0.0	0	0.0	1,015	23,754	21,004	75.0	0	304,228
Zone	1 Total/Ave.	0	0.0	0	0.0	1,015	23,754	21,004	75.0	0	304,228
Zone	1 Block	0	0.0	0	0.0	1,015	23,754	21,004	75.0	0	304,228
System	1 Total/Ave.	0	0.0	0	0.0	1,015	23,754	21,004	75.0	0	304,228
System	1 Block	0	0.0	0	0.0	1,015	23,754	21,004	75.0	0	304,228

COOLING LOADS AT SPACE PEAK - ALTERNATIVE 1
SCHOOL_OFFICES

----- BUILDING ENVELOPE COOLING LOADS -----

(Roof - Skylight)

(At time of Space Peak)

Room Number	Description	Roof		Roof		Skylight		Skylt Solar CLF	Skylight		Skylight	
		Return Air Sensible Load (Btuh)	R.A. CLTD (F)	Space Sensible Load (Btuh)	Space CLTD (F)	Return Air Solar (Btuh)	Space Solar (Btuh)		Return Air Conduction Load (Btuh)	Skylt R.A. CLTD (F)	Space Conduction Load (Btuh)	Skylt Space CLTD (F)
1	BLOCK	0	0.0	61,004	69.6	0	0	0.000	0	0.0	0	0.0
Zone	1 Total/Ave.	0	0.0	61,004	69.6	0	0	0.000	0	0.0	0	0.0
Zone	1 Block	0	0.0	61,004	69.6	0	0	0.000	0	0.0	0	0.0
System	1 Total/Ave.	0	0.0	61,004	69.6	0	0	0.000	0	0.0	0	0.0
System	1 Block	0	0.0	61,004	69.6	0	0	0.000	0	0.0	0	0.0

----- BUILDING ENVELOPE COOLING LOADS -----

(Wall - Window)

(At time of Space Peak)

Room Number	Description	Wall		Wall		Glass		Glass Return Air Solar CLF	Glass		Glass	
		Plenum Load (Btuh)	Plenm CLTD (F)	Space Load (Btuh)	Space CLTD (F)	Space Solar (Btuh)	Return Air Solar (Btuh)		Space Conduction (Btuh)	Glass Space CLTD (F)	Return Air Conduction (Btuh)	Glass R.A. CLTD (F)
1	BLOCK	0	0.0	136,754	35.0	80,520	0	0.420	28,008	20.6	0	0.0
Zone	1 Total/Ave.	0	0.0	136,754	35.0	80,520	0	0.420	28,008	20.6	0	0.0
Zone	1 Block	0	0.0	136,754	35.0	80,520	0	0.420	28,008	20.6	0	0.0
System	1 Total/Ave.	0	0.0	136,754	35.0	80,520	0	0.420	28,008	20.6	0	0.0
System	1 Block	0	0.0	136,754	35.0	80,520	0	0.420	28,008	20.6	0	0.0

----- BUILDING ENVELOPE COOLING LOADS -----

(Exposed Floor - Partitions - Infiltration)

(At time of Space Peak)

Room Number	Description	Exposed		Partitions		Infiltr.		Infiltr. Latent (Btuh)	Plenm Dry B Temp. (F)	Ceiling Sensible Load (Btuh)	Envelope Total (Btuh)
		Floor Sensible (Btuh)	Expsd Floor CLTD (F)	Sensible (Btuh)	Part. CLTD (F)	Airflow (Cfm)	Sensible (Btuh)				
1	BLOCK	0	0.0	0	0.0	1,015	23,416	6,138	75.0	0	335,839
Zone	1 Total/Ave.	0	0.0	0	0.0	1,015	23,416	6,138	75.0	0	335,839
Zone	1 Block	0	0.0	0	0.0	1,015	23,416	6,138	75.0	0	335,839
System	1 Total/Ave.	0	0.0	0	0.0	1,015	23,416	6,138	75.0	0	335,839
System	1 Block	0	0.0	0	0.0	1,015	23,416	6,138	75.0	0	335,839

HEATING LOADS AT COIL PEAK - ALTERNATIVE 1
SCHOOL_OFFICES

----- BUILDING ENVELOPE HEATING LOADS -----												
(Roof - Skylight)												
(At time of Coil Peak)												
Room Number	Description	Roof		Roof		Skylight		Skylight		Skylight		Skylight
		Return Air Sensible Load (Btuh)	Roof R.A. CLTD (F)	Space Sensible Load (Btuh)	Roof Space CLTD (F)	Return Air Solar (Btuh)	Skylight Space Solar (Btuh)	Skylt Solar CLF	Return Air Conduction Load (Btuh)	Skylt R.A. CLTD (F)	Space Conduction Load (Btuh)	Skylt Space CLTD (F)
1	BLOCK	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0
Zone	1 Total/Ave.	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0
Zone	1 Block	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0
System	1 Total/Ave.	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0
System	1 Block	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0

----- BUILDING ENVELOPE HEATING LOADS -----											
(Wall - Window)											
(At time of Coil Peak)											
Room		Wall	Wall	Wall	Wall	Glass	Glass	Glass	Glass	Glass	Glass
Number	Description	Plenum	Plenum	Space	Space	Space	Return Air	Solar	Space	Space	Return Air
		Load	CLTD	Load	CLTD	Solar	Solar	CLF	Conduction	CLTD	Conduction
		(Btuh)	(F)	(Btuh)	(F)	(Btuh)	(Btuh)		(Btuh)	(F)	(Btuh)
1	BLOCK	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0
Zone	1 Total/Ave.	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0
Zone	1 Block	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0
System	1 Total/Ave.	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0
System	1 Block	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0

----- BUILDING ENVELOPE HEATING LOADS -----											
(Exposed Floor - Partitions - Infiltration)											
(At time of Coil Peak)											
Room Number	Description	Exposed Floor Sensible (Btuh)	Expsd Floor CLTD (F)	Partition Sensible (Btuh)	Part. CLTD (F)	Infilt. Airflow (Cfm)	Infilt. Sensible (Btuh)	Infilt. Latent (Btuh)	Plenum Dry B Temp. (F)	Ceiling Sensible Load (Btuh)	Envelope Total (Btuh)
1	BLOCK	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485
Zone	1 Total/Ave.	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485
Zone	1 Block	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485
System	1 Total/Ave.	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485
System	1 Block	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485

HEATING LOADS AT SPACE PEAK - ALTERNATIVE 1
SCHOOL_OFFICES

----- BUILDING ENVELOPE HEATING LOADS -----												
(Roof - Skylight)												
(At time of Space Peak)												
Room Number	Description	Roof Return Air Sensible Load (Btuh)	Roof R.A. CLTD (F)	Roof Space Sensible Load (Btuh)	Roof Space CLTD (F)	Skylight Return Air Solar (Btuh)	Skylight Space Solar (Btuh)	Skylt Solar CLF	Skylight Return Air Conduction Load (Btuh)	Skylt R.A. CLTD (F)	Skylight Space Conduction Load (Btuh)	Skylt Space CLTD (F)
1	BLOCK	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0
Zone	1 Total/Ave.	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0
Zone	1 Block	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0
System	1 Total/Ave.	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0
System	1 Block	0	0.0	-39,442	-45.0	0	0	0.000	0	0.0	0	0.0

----- BUILDING ENVELOPE HEATING LOADS -----												
(Wall - Window)												
(At time of Space Peak)												
Room Number	Description	Wall Plenum Load (Btuh)	Wall Plenm CLTD (F)	Wall Space Load (Btuh)	Wall Space CLTD (F)	Glass Space Solar (Btuh)	Glass Return Air Solar (Btuh)	Glass Solar CLF	Glass Space Conduction (Btuh)	Glass Space CLTD (F)	Glass Return Air Conduction (Btuh)	Glass R.A. CLTD (F)
1	BLOCK	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0	0.0
Zone	1 Total/Ave.	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0	0.0
Zone	1 Block	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0	0.0
System	1 Total/Ave.	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0	0.0
System	1 Block	0	0.0	-175,827	-45.0	0	0	0.000	-66,892	-45.0	0	0.0

----- BUILDING ENVELOPE HEATING LOADS -----												
(Exposed Floor - Partitions - Infiltration)												
(At time of Space Peak)												
Room Number	Description	Exposed Floor Sensible (Btuh)	Expsd Floor CLTD (F)	Partition Sensible (Btuh)	Part. CLTD (F)	Infilt. Airflow (Cfm)	Infilt. Sensible (Btuh)	Infilt. Latent (Btuh)	Plenm Dry B Temp. (F)	Ceiling Sensible Load (Btuh)	Envelope Total (Btuh)	
1	BLOCK	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485	
Zone	1 Total/Ave.	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485	
Zone	1 Block	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485	
System	1 Total/Ave.	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485	
System	1 Block	0	0.0	0	0.0	1,268	-63,324	0	68.0	0	-345,485	

COOLING LOADS AT COIL PEAK - ALTERNATIVE 1
SCHOOL_OFFICES

----- A I R F L O W C O O L I N G L O A D S -----
(At time of Coil Peak)

		----- Ventilation -----			----- Optional Ventilation -----			----- Bypass -----			Ov/Undr Sizing (Btuh)
Room Number	Description	Airflow (Cfm)	Sensible (Btuh)	Latent Airflow (Btuh)	Airflow (Cfm)	Sensible (Btuh)	Latent Airflow (Btuh)	Airflow (Cfm)	Sensible (Btuh)	Latent (Btuh)	
1	BLOCK	4,110	96,211	85,075	0	0	0	0	0	0	0
Zone	1 Total/Ave.	4,110	96,211	85,075	0	0	0	0	0	0	0
Zone	1 Block	4,110	96,211	85,075	0	0	0	0	0	0	0
System	1 Total/Ave.	4,110	96,211	85,075	0	0	0	0	0	0	0
System	1 Block	4,110	96,211	85,075	0	0	0	0	0	0	0

HEATING LOADS AT COIL PEAK - ALTERNATIVE 1
SCHOOL_OFFICES

----- A I R F L O W H E A T I N G L O A D S -----
(At time of Coil Peak)

		--- Ventilation ---		---- Op. Vent. ----		----- Reheat -----		----- Humidif. -----		Total (Btuh)
Room Number	Description	Airflow (Cfm)	Sensible (Btuh)	Airflow (Cfm)	Sensible (Btuh)	Airflow (Cfm)	Sensible (Btuh)	Airflow (Cfm)	Latent (Btuh)	
1	BLOCK	4,110	-205,189	0	0	0	0	0	0	-205,189
Zone	1 Total/Ave.	4,110	-205,189	0	0	0	0	0	0	-205,189
Zone	1 Block	4,110	-205,189	0	0	0	0	0	0	-205,189
System	1 Total/Ave.	4,110	-205,189	0	0	0	0	0	0	-205,189
System	1 Block	4,110	-205,189	0	0	0	0	0	0	-205,189

COOLING AIRFLOW HEAT GAIN/LOSS - ALTERNATIVE 1
SCHOOL_OFFICES

----- AIRFLOW HEAT GAIN AND LOSS -----
(At time of Coil Peak)

Room Number	Description	Duct Heat Pickup (Btuh)	Supply Fan Heat (Btuh)	Return Fan Heat (Btuh)	System Exhaust Heat Loss (Btuh)	Cooling							
						Total	System Exhaust Airflow (Cfm)	Room Exhaust Airflow (Cfm)	Ducted Airflow (Cfm)	Plenum Airflow (Cfm)	Run Around Airflow (Cfm)	Corridor Airflow (Cfm)	System Return Airflow (Cfm)
1	BLOCK	0	0	0	0	0	4,110	0	24,938	0	0	0	24,938
Zone	1 Total/Ave.	0	0	0	0	0	4,110	0	24,938	0	0	0	24,938
Zone	1 Block	0	0	0	0	0	4,110	0	24,938	0	0	0	24,938
System	1 Total/Ave.	0	0	0	0	0	4,110	0	24,938	0	0	0	24,938
System	1 Block	0	0	0	0	0	4,110	0	24,938	0	0	0	24,938

HEATING AIRFLOW HEAT GAIN/LOSS - ALTERNATIVE 1
SCHOOL_OFFICES

----- AIRFLOW HEAT GAIN AND LOSS -----
(At time of Coil Peak)

Room Number	Description	Supply Fan Heat (Btuh)	Return Fan Heat (Btuh)	System Exhaust Heat Loss (Btuh)	Heating							
					Total	System Exhaust Airflow (Cfm)	Room Exhaust Airflow (Cfm)	Ducted Airflow (Cfm)	Plenum Airflow (Cfm)	Run Around Airflow (Cfm)	Corridor Airflow (Cfm)	System Return Airflow (Cfm)
1	BLOCK	0	0	0	0	4,110	0	24,938	0	0	0	24,938
Zone	1 Total/Ave.	0	0	0	0	4,110	0	24,938	0	0	0	24,938
Zone	1 Block	0	0	0	0	4,110	0	24,938	0	0	0	24,938
System	1 Total/Ave.	0	0	0	0	4,110	0	24,938	0	0	0	24,938
System	1 Block	0	0	0	0	4,110	0	24,938	0	0	0	24,938

ROOM PSYCHROMETRICS - ALTERNATIVE 1
SCHOOL_OFFICES

----- P S Y C H R O M E T R I C S T A T E P O I N T S -----

Room 1

	Dry Bulb (F)	Wet Bulb (F)	Relat. Humid. (%)	Humid. Ratio (GR)	Enthalpy (Btu/Lb)	Temp. Diff. (F)
Space	75.0	64.6	57.3	75.0	29.7	
Main System						
Return Air Heat Pickup						0.0
Return Fan						0.0
Return Air	75.0	64.6	57.3	75.0	29.7	
Outdoor Air	95.0	76.0	42.3	105.7	39.5	
Return/Outdoor Air Mix	78.3	66.7	54.8	80.1	31.3	
Blow through Fan						0.0
Entering Coil	78.3	66.7	54.8	80.1	31.3	
Leaving Coil	63.1	60.4	86.2	75.0	26.8	
Draw Through Fan						0.0
Duct Frictional Heat						0.0
Supply Duct Heat Gain						0.0
Cold Deck Supply Air	63.1	60.4	86.2	75.0	26.8	
Supply Air	63.1	60.4	86.2	75.0	26.8	

Percent Outside Air 16.48 (%)
Sensible Heat Ratio (SHR) 0.982
Percent Supply Air Bypassing Coil 0.00 (%)
Coil Airflow 24,938 (Cfm)

BUILDING U-VALUES - ALTERNATIVE 1
SCHOOL_OFFICES

----- B U I L D I N G U - V A L U E S -----

		Room U-Values (Btu/hr/sqft/F)									Room Mass (lb/ sqft)	Room Capac (Btu/ sqft/F)
Room Number	Description	Part.	ExFlr	Summr Skylt	Wintr Skylt	Roof	Summr Windo	Wintr Windo	Wall	Ceil.		
1	BLOCK	0.000	0.000	0.000	0.000	0.070	1.030	1.126	0.344	0.000	124.8	24.93
Zone	1 Total/Ave.	0.000	0.000	0.000	0.000	0.070	1.030	1.126	0.344	0.000	124.8	24.93
System	1 Total/Ave.	0.000	0.000	0.000	0.000	0.070	1.030	1.126	0.344	0.000	124.8	24.93
Building		0.000	0.000	0.000	0.000	0.070	1.030	1.126	0.344	0.000	124.8	24.93

BUILDING AREAS - ALTERNATIVE 1
 SCHOOL_OFFICES

----- B U I L D I N G A R E A S -----

Room Number	Description	Number of Duplicate		Floor Area/Dupl Room (sqft)	Total Floor Area (sqft)	Partition Area (sqft)	Exposed Floor Area (sqft)	Skylight Area (sqft)	SkI /Rf (%)	Net Roof Area (sqft)	Window Area (sqft)	Win /Wl (%)	Net Wall Area (sqft)
		Flr	Rm										
1	BLOCK	2	1	12,469	24,938	0	0	0	0	12,469	1,320	10	11,364
Zone	1 Total/Ave.				24,938	0	0	0	0	12,469	1,320	10	11,364
System	1 Total/Ave.				24,938	0	0	0	0	12,469	1,320	10	11,364
Building					24,938	0	0	0	0	12,469	1,320	10	11,364

ASHRAE 90 ANALYSIS - ALTERNATIVE 1
 SCHOOL_OFFICES

----- A S H R A E 9 0 A N A L Y S I S -----

Overall Roof U-Value = 0.070 (Btu/Hr/Sq Ft/F)
 Overall Wall U-Value = 0.415 (Btu/Hr/Sq Ft/F)
 Overall Building U-Value = 0.244 (Btu/Hr/Sq Ft/F)

Roof Overall Thermal Transfer Value (OTTvr) = 4.12 (Btu/Hr/Sq Ft)
 Wall Overall Thermal Transfer Value (OTTvw) = 20.13 (Btu/Hr/Sq Ft)

SYSTEM LOAD PROFILE - ALTERNATIVE 1
 FAN COIL UNITS

Main System 1 FC FAN COIL

Percent Design Load	---- Cooling Load ----			----- Heating Load -----			---- Cooling Airflow ----			---- Heating Airflow ----		
	Cap. (Ton)	Hours (%)	Hours	Capacity (Btuh)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours
0 - 5	2.0	8	244	-30,992	11	510	1,246.9	0	0	0.0	0	0
5 - 10	4.0	10	306	-61,983	9	411	2,493.8	0	0	0.0	0	0
10 - 15	6.1	11	335	-92,975	7	325	3,740.7	0	0	0.0	0	0
15 - 20	8.1	6	168	-123,966	10	443	4,987.6	0	0	0.0	0	0
20 - 25	10.1	6	176	-154,958	6	255	6,234.6	0	0	0.0	0	0
25 - 30	12.1	5	146	-185,950	11	488	7,481.5	0	0	0.0	0	0
30 - 35	14.2	7	215	-216,941	12	528	8,728.4	0	0	0.0	0	0
35 - 40	16.2	13	397	-247,933	12	546	9,975.3	0	0	0.0	0	0
40 - 45	18.2	3	91	-278,924	6	271	11,222.2	0	0	0.0	0	0
45 - 50	20.2	5	154	-309,916	7	298	12,469.1	0	0	0.0	0	0
50 - 55	22.3	2	61	-340,908	5	208	13,716.0	0	0	0.0	0	0
55 - 60	24.3	6	185	-371,899	7	298	14,963.0	0	0	0.0	0	0
60 - 65	26.3	12	368	-402,891	0	0	16,209.9	0	0	0.0	0	0
65 - 70	28.3	5	152	-433,882	0	0	17,456.8	0	0	0.0	0	0
70 - 75	30.3	0	0	-464,874	0	0	18,703.7	0	0	0.0	0	0
75 - 80	32.4	0	0	-495,866	0	0	19,950.6	0	0	0.0	0	0
80 - 85	34.4	0	0	-526,857	0	0	21,197.5	0	0	0.0	0	0
85 - 90	36.4	0	0	-557,849	0	0	22,444.4	0	0	0.0	0	0
90 - 95	38.4	0	0	-588,841	0	0	23,691.3	0	0	0.0	0	0
95 - 100	40.5	0	0	-619,832	0	0	24,938.3	100	8,760	0.0	0	0
Hours Off	0.0	0	5,762	0	0	4,179	0.0	0	0	0.0	0	8,760

SYSTEM TOTALS LOAD PROFILE - ALTERNATIVE 1
FAN COIL UNITS

----- S Y S T E M L O A D P R O F I L E -----

System Totals

Percent Design Load	---- Cooling Load ----			----- Heating Load -----			---- Cooling Airflow ----			---- Heating Airflow ----		
	Cap. (Ton)	Hours (%)	Hours	Capacity (Btuh)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours
0 - 5	2.0	8	244	-30,992	11	510	1,246.9	0	0	0.0	0	0
5 - 10	4.0	10	306	-61,983	9	411	2,493.8	0	0	0.0	0	0
10 - 15	6.1	11	335	-92,975	7	325	3,740.7	0	0	0.0	0	0
15 - 20	8.1	6	168	-123,966	10	443	4,987.6	0	0	0.0	0	0
20 - 25	10.1	6	176	-154,958	6	255	6,234.6	0	0	0.0	0	0
25 - 30	12.1	5	146	-185,950	11	488	7,481.5	0	0	0.0	0	0
30 - 35	14.2	7	215	-216,941	12	528	8,728.4	0	0	0.0	0	0
35 - 40	16.2	13	397	-247,933	12	546	9,975.3	0	0	0.0	0	0
40 - 45	18.2	3	91	-278,924	6	271	11,222.2	0	0	0.0	0	0
45 - 50	20.2	5	154	-309,916	7	298	12,469.1	0	0	0.0	0	0
50 - 55	22.3	2	61	-340,908	5	208	13,716.0	0	0	0.0	0	0
55 - 60	24.3	6	185	-371,899	7	298	14,963.0	0	0	0.0	0	0
60 - 65	26.3	12	368	-402,891	0	0	16,209.9	0	0	0.0	0	0
65 - 70	28.3	5	152	-433,882	0	0	17,456.8	0	0	0.0	0	0
70 - 75	30.3	0	0	-464,874	0	0	18,703.7	0	0	0.0	0	0
75 - 80	32.4	0	0	-495,866	0	0	19,950.6	0	0	0.0	0	0
80 - 85	34.4	0	0	-526,857	0	0	21,197.5	0	0	0.0	0	0
85 - 90	36.4	0	0	-557,849	0	0	22,444.4	0	0	0.0	0	0
90 - 95	38.4	0	0	-588,841	0	0	23,691.3	0	0	0.0	0	0
95 - 100	40.5	0	0	-619,832	0	0	24,938.3	100	8,760	0.0	0	0
Hours Off	0.0	0	5,762	0	0	4,179	0.0	0	0	0.0	0	8,760

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-432,143	0.0	-335,916	0.0	-335,916	0.0	-335,916	0.0	-335,916	0.0
2	32.9	30.7	-405,128	0.0	-344,783	0.0	-344,783	0.0	-344,783	0.0	-344,783	0.0
3	33.1	31.3	-385,854	0.0	-352,860	0.0	-352,860	0.0	-352,860	0.0	-352,860	0.0
4	33.9	32.1	-334,294	0.0	-353,836	0.0	-353,836	0.0	-353,836	0.0	-353,836	0.0
5	35.2	33.5	-295,730	0.0	-357,007	0.0	-357,007	0.0	-357,007	0.0	-357,007	0.0
6	37.0	35.4	-300,617	0.0	-355,881	0.0	-355,881	0.0	-355,881	0.0	-355,881	0.0
7	39.0	37.6	-301,768	0.0	-346,903	0.0	-346,903	0.0	-346,903	0.0	-346,903	0.0
8	41.3	40.1	-291,876	0.0	-336,692	0.0	-336,692	0.0	-336,692	0.0	-336,692	0.0
9	43.7	42.5	-256,002	0.0	-313,605	0.0	-313,605	0.0	-313,605	0.0	-313,605	0.0
10	46.1	44.0	-218,184	0.0	-296,066	0.0	-296,066	0.0	-296,066	0.0	-296,066	0.0
11	48.4	45.0	-174,119	0.0	-266,740	0.0	-266,740	0.0	-266,740	0.0	-266,740	0.0
12	50.5	45.6	-138,447	0.0	-246,059	0.0	-246,059	0.0	-246,059	0.0	-246,059	0.0
13	52.2	46.1	-105,506	0.0	-229,416	0.0	-229,416	0.0	-229,416	0.0	-229,416	0.0
14	53.5	46.4	-77,363	0.0	-206,115	0.0	-206,115	0.0	-206,115	0.0	-206,115	0.0
15	54.3	46.3	-50,297	0.0	-190,236	0.0	-190,236	0.0	-190,236	0.0	-190,236	0.0
16	54.6	46.1	-35,271	0.0	-170,144	0.0	-170,144	0.0	-170,144	0.0	-170,144	0.0
17	54.0	45.9	-27,425	0.0	-165,189	0.0	-165,189	0.0	-165,189	0.0	-165,189	0.0
18	52.5	45.0	-51,407	0.0	-170,530	0.0	-170,530	0.0	-170,530	0.0	-170,530	0.0
19	50.1	44.8	-74,958	0.0	-181,005	0.0	-181,005	0.0	-181,005	0.0	-181,005	0.0
20	47.1	43.3	-107,166	0.0	-206,677	0.0	-206,677	0.0	-206,677	0.0	-206,677	0.0
21	43.7	40.4	-135,929	0.0	-233,804	0.0	-233,804	0.0	-233,804	0.0	-233,804	0.0
22	40.4	37.3	-167,519	0.0	-261,936	0.0	-261,936	0.0	-261,936	0.0	-261,936	0.0
23	37.3	34.9	-189,971	0.0	-285,329	0.0	-285,329	0.0	-285,329	0.0	-285,329	0.0
24	34.9	32.6	-214,626	0.0	-312,950	0.0	-312,950	0.0	-312,950	0.0	-312,950	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-208,798	0.0	-266,811	0.0	-266,811	0.0	-266,811	0.0	-266,811	0.0
2	39.7	37.1	-231,293	0.0	-289,964	0.0	-289,964	0.0	-289,964	0.0	-289,964	0.0
3	37.8	35.1	-245,995	0.0	-308,862	0.0	-308,862	0.0	-308,862	0.0	-308,862	0.0
4	36.3	33.8	-264,400	0.0	-322,365	0.0	-322,365	0.0	-322,365	0.0	-322,365	0.0
5	35.1	32.6	-273,974	0.0	-338,527	0.0	-338,527	0.0	-338,527	0.0	-338,527	0.0
6	34.4	32.0	-280,594	0.0	-353,204	0.0	-353,204	0.0	-353,204	0.0	-353,204	0.0
7	34.1	31.9	-282,556	0.0	-363,462	0.0	-363,462	0.0	-363,462	0.0	-363,462	0.0
8	34.6	32.4	-272,610	0.0	-363,869	0.0	-363,869	0.0	-363,869	0.0	-363,869	0.0
9	36.0	33.8	-234,287	0.0	-344,356	0.0	-344,356	0.0	-344,356	0.0	-344,356	0.0
10	38.2	34.7	-193,591	0.0	-328,066	0.0	-328,066	0.0	-328,066	0.0	-328,066	0.0
11	40.9	36.2	-152,772	0.0	-307,171	0.0	-307,171	0.0	-307,171	0.0	-307,171	0.0
12	43.9	37.4	-118,951	0.0	-287,269	0.0	-287,269	0.0	-287,269	0.0	-287,269	0.0
13	46.9	39.4	-87,946	0.0	-257,436	0.0	-257,436	0.0	-257,436	0.0	-257,436	0.0
14	49.7	41.4	-66,452	0.0	-233,345	0.0	-233,345	0.0	-233,345	0.0	-233,345	0.0
15	51.8	42.8	-38,462	0.0	-203,205	0.0	-203,205	0.0	-203,205	0.0	-203,205	0.0
16	53.2	43.9	-17,309	0.0	-185,929	0.0	-185,929	0.0	-185,929	0.0	-185,929	0.0
17	53.7	44.2	-9,727	0.0	-172,894	0.0	-172,894	0.0	-172,894	0.0	-172,894	0.0
18	53.4	44.4	-16,861	0.0	-161,274	0.0	-161,274	0.0	-161,274	0.0	-161,274	0.0
19	52.7	44.4	-44,939	0.0	-168,941	0.0	-168,941	0.0	-168,941	0.0	-168,941	0.0
20	51.5	45.2	-79,187	0.0	-180,367	0.0	-180,367	0.0	-180,367	0.0	-180,367	0.0
21	50.0	44.6	-109,133	0.0	-192,758	0.0	-192,758	0.0	-192,758	0.0	-192,758	0.0
22	48.1	43.3	-136,636	0.0	-213,278	0.0	-213,278	0.0	-213,278	0.0	-213,278	0.0
23	46.1	41.8	-165,772	0.0	-226,887	0.0	-226,887	0.0	-226,887	0.0	-226,887	0.0
24	43.9	40.1	-191,011	0.0	-246,726	0.0	-246,726	0.0	-246,726	0.0	-246,726	0.0

March			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	51.3	46.8	-69,143			0.0	-7,669			0.0	-142,275			0.0	-142,275			0.0	-142,275			0.0
2	48.7	44.6	-88,727			0.0	0			0.0	-164,784			0.0	-164,784			0.0	-164,784			0.0
3	46.6	42.9	-110,403			0.0	-85,442			0.0	-188,228			0.0	-188,228			0.0	-188,228			0.0
4	44.9	41.4	-130,193			0.0	-205,464			0.0	-205,464			0.0	-205,464			0.0	-205,464			0.0
5	43.9	40.8	-140,798			0.0	-223,726			0.0	-223,726			0.0	-223,726			0.0	-223,726			0.0
6	43.5	40.8	-152,217			0.0	-234,590			0.0	-234,590			0.0	-234,590			0.0	-234,590			0.0
7	44.0	41.4	-153,966			0.0	-243,435			0.0	-243,435			0.0	-243,435			0.0	-243,435			0.0
8	45.4	42.7	-120,676			0.0	-226,099			0.0	-226,099			0.0	-226,099			0.0	-226,099			0.0
9	47.7	44.3	-81,464			0.0	-211,019			0.0	-211,019			0.0	-211,019			0.0	-211,019			0.0
10	50.6	45.8	-38,842			0.0	-183,717			0.0	-183,717			0.0	-183,717			0.0	-183,717			0.0
11	53.9	47.4	0			0.0	-151,699			0.0	-151,699			0.0	-151,699			0.0	-151,699			0.0
12	57.4	49.0	0			0.0	-119,401			0.0	-119,401			0.0	-119,401			0.0	-119,401			0.0
13	60.7	50.8	0			0.0	-92,513			0.0	-92,513			0.0	-92,513			0.0	-92,513			0.0
14	63.6	52.7	0			0.0	-63,643			0.0	-63,643			0.0	-63,643			0.0	-63,643			0.0
15	65.9	53.7	0			0.0	-36,865			0.0	-36,865			0.0	-36,865			0.0	-36,865			0.0
16	67.3	54.4	0		1.3		-12,037			0.0	-12,037			0.0	-12,037			0.0	-12,037			0.0
17	67.8	54.6	0		11.2		0			0.0	0			0.0	0			0.0	0			0.0
18	67.4	54.8	0		10.3		0			0.0	0			0.0	0			0.0	0			0.0
19	66.4	55.2	0		7.4		0			0.0	0			0.0	0			0.0	0			0.0
20	64.7	56.0	0		4.7		-10,325			0.0	-10,325			0.0	-10,325			0.0	-10,325			0.0
21	62.5	56.0	0		1.7		-35,290			0.0	-35,290			0.0	-35,290			0.0	-35,290			0.0
22	60.0	54.1	-18,111			0.0	-61,842			0.0	-61,842			0.0	-61,842			0.0	-61,842			0.0
23	57.1	51.9	-51,061			0.0	-86,288			0.0	-86,288			0.0	-86,288			0.0	-86,288			0.0
24	54.2	49.4	-79,402			0.0	-112,387			0.0	-112,387			0.0	-112,387			0.0	-112,387			0.0

April			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	61.0	56.5	0	0.0			-60,643		0.0		-60,643		0.0		-60,643		0.0		-60,643		0.0	
2	58.9	54.9	0	0.0			-5,285		0.0		-5,285		0.0		-5,285		0.0		-5,285		0.0	
3	57.0	53.5	0	0.0			0		0.0		0		0.0		0		0.0		0		0.0	
4	55.4	52.4	0	0.0			0		0.0		0		0.0		0		0.0		0		0.0	
5	54.2	51.4	0	0.0			0		0.0		0		0.0		0		0.0		0		0.0	
6	53.5	50.9	0	0.0			-75,543		0.0		-75,543		0.0		-75,543		0.0		-75,543		0.0	
7	53.2	51.1	-19,684	0.0			-127,896		0.0		-127,896		0.0		-127,896		0.0		-127,896		0.0	
8	53.9	51.5	0	0.0			-122,550		0.0		-122,550		0.0		-122,550		0.0		-122,550		0.0	
9	55.9	52.1	0	0.0			-107,114		0.0		-107,114		0.0		-107,114		0.0		-107,114		0.0	
10	58.9	53.2	0	0.0			-71,230		0.0		-71,230		0.0		-71,230		0.0		-71,230		0.0	
11	62.6	55.2	0	0.0			-34,745		0.0		-34,745		0.0		-34,745		0.0		-34,745		0.0	
12	66.5	57.3	0	0.0			0		0.0		0		0.0		0		0.0		0		0.0	
13	70.2	59.6	0	8.9			0		0.0		0		0.0		0		0.0		0		0.0	
14	73.2	61.0	0	15.7			0		0.0		0		0.0		0		0.0		0		0.0	
15	75.2	62.2	0	18.1			0		0.0		0		0.0		0		0.0		0		0.0	
16	75.9	62.2	0	19.8			0		0.0		0		0.0		0		0.0		0		0.0	
17	75.6	62.0	0	20.3			0		0.0		0		0.0		0		0.0		0		0.0	
18	74.9	61.7	0	20.1			0		0.0		0		0.0		0		0.0		0		0.0	
19	73.7	62.0	0	17.3			0		4.3		0		4.3		0		4.3		0		4.3	
20	72.1	62.4	0	14.3			0		4.9		0		4.9		0		4.9		0		4.9	
21	70.2	63.3	0	11.4			0		2.9		0		2.9		0		2.9		0		2.9	
22	68.0	62.5	0	8.7			0		0.9		0		0.9		0		0.9		0		0.9	
23	65.7	60.5	0	6.0			-15,286		0.0		-15,286		0.0		-15,286		0.0		-15,286		0.0	
24	63.4	58.5	0	3.5			-38,822		0.0		-38,822		0.0		-38,822		0.0		-38,822		0.0	

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

May			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	9.2	0	2.1	0	2.2	0	2.2	0	2.2
2	65.7	61.5	0	6.9	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	5.1	-24,580	0.0	-24,580	0.0	-24,580	0.0	-24,580	0.0
4	61.8	58.4	0	3.7	-48,242	0.0	-48,242	0.0	-48,242	0.0	-48,242	0.0
5	60.5	57.1	0	2.4	-65,108	0.0	-65,108	0.0	-65,108	0.0	-65,108	0.0
6	59.7	56.5	0	1.3	-5,175	0.0	-5,175	0.0	-5,175	0.0	-5,175	0.0
7	59.4	56.5	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	5.5	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	8.8	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	12.4	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	15.9	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	18.9	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	21.9	0	0.0	0	0.0	0	0.0	0	0.0
14	81.9	65.3	0	24.5	0	5.1	0	5.1	0	5.1	0	5.1
15	84.1	66.9	0	26.5	0	13.0	0	13.0	0	13.0	0	13.0
16	84.9	67.1	0	28.2	0	14.4	0	14.4	0	14.4	0	14.4
17	84.6	67.3	0	28.6	0	15.5	0	15.5	0	15.5	0	15.5
18	83.8	67.1	0	28.5	0	15.7	0	15.7	0	15.7	0	15.7
19	82.4	67.5	0	26.6	0	15.3	0	15.3	0	15.3	0	15.3
20	80.6	68.9	0	23.2	0	13.2	0	13.2	0	13.2	0	13.2
21	78.5	71.0	0	20.1	0	12.8	0	12.8	0	12.8	0	12.8
22	76.1	69.9	0	16.8	0	10.9	0	10.9	0	10.9	0	10.9
23	73.4	68.0	0	13.9	0	7.3	0	7.3	0	7.3	0	7.3
24	70.8	65.5	0	11.4	0	4.8	0	4.8	0	4.8	0	4.8

June			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	20.0	0	9.1	0	11.6	0	11.6	0	11.6
2	72.6	68.4	0	16.2	0	7.7	0	7.8	0	7.8	0	7.8
3	70.9	67.3	0	13.7	0	5.8	0	5.8	0	5.8	0	5.8
4	69.6	66.5	0	12.3	0	3.3	0	3.3	0	3.3	0	3.3
5	68.7	65.8	0	10.9	0	1.9	0	1.9	0	1.9	0	1.9
6	68.5	65.7	0	10.3	0	0.6	0	0.6	0	0.6	0	0.6
7	69.0	66.3	0	11.7	0	1.1	0	1.1	0	1.1	0	1.1
8	70.6	66.9	0	15.5	0	2.6	0	2.6	0	2.6	0	2.6
9	73.0	67.7	0	18.6	0	4.3	0	4.3	0	4.3	0	4.3
10	76.1	68.1	0	22.7	0	7.5	0	7.5	0	7.5	0	7.5
11	79.5	69.1	0	26.4	0	11.0	0	11.0	0	11.0	0	11.0
12	82.9	70.1	0	29.5	0	14.3	0	14.3	0	14.3	0	14.3
13	86.0	71.0	0	32.1	0	16.7	0	16.7	0	16.7	0	16.7
14	88.4	72.5	0	35.0	0	21.1	0	21.1	0	21.1	0	21.1
15	90.0	74.0	0	37.9	0	25.2	0	25.2	0	25.2	0	25.2
16	90.5	73.7	0	39.3	0	25.7	0	25.7	0	25.7	0	25.7
17	90.3	74.2	0	40.5	0	27.9	0	27.9	0	27.9	0	27.9
18	89.4	73.9	0	39.6	0	28.2	0	28.2	0	28.2	0	28.2
19	88.1	74.5	0	37.4	0	27.4	0	27.4	0	27.4	0	27.4
20	86.4	75.3	0	33.1	0	25.1	0	25.1	0	25.1	0	25.1
21	84.3	76.5	0	30.8	0	26.1	0	26.1	0	26.1	0	26.1
22	81.9	75.7	0	28.3	0	23.8	0	23.8	0	23.8	0	23.8
23	79.5	74.0	0	24.8	0	20.1	0	20.1	0	20.1	0	20.1
24	77.0	72.1	0	21.8	0	16.0	0	16.0	0	16.0	0	16.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

July	----- Design -----					----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5		0	20.4		0		7.0		0		9.1		0		9.1		0		9.1
2	72.4	69.4		0	16.4		0		7.1		0		7.2		0		7.2		0		7.2
3	71.3	68.4		0	14.4		0		4.9		0		5.0		0		5.0		0		5.0
4	70.5	67.7		0	13.1		0		2.8		0		2.8		0		2.8		0		2.8
5	70.0	67.4		0	11.5		0		1.7		0		1.7		0		1.7		0		1.7
6	69.9	67.5		0	10.8		0		0.8		0		0.8		0		0.8		0		0.8
7	70.3	68.0		0	12.6		0		1.1		0		1.1		0		1.1		0		1.1
8	71.7	69.0		0	16.0		0		3.4		0		3.4		0		3.4		0		3.4
9	73.7	69.5		0	19.5		0		6.0		0		6.0		0		6.0		0		6.0
10	76.2	70.6		0	22.5		0		9.7		0		9.7		0		9.7		0		9.7
11	78.9	71.8		0	25.8		0		12.9		0		12.9		0		12.9		0		12.9
12	81.4	73.0		0	29.6		0		16.7		0		16.7		0		16.7		0		16.7
13	83.4	74.4		0	32.3		0		19.0		0		19.0		0		19.0		0		19.0
14	84.8	74.8		0	34.2		0		21.0		0		21.0		0		21.0		0		21.0
15	85.2	75.0		0	36.6		0		23.3		0		23.3		0		23.3		0		23.3
16	85.1	75.0		0	39.1		0		24.3		0		24.3		0		24.3		0		24.3
17	84.6	74.7		0	40.0		0		24.6		0		24.6		0		24.6		0		24.6
18	83.8	74.6		0	38.6		0		25.0		0		25.0		0		25.0		0		25.0
19	82.7	74.6		0	36.7		0		25.3		0		25.3		0		25.3		0		25.3
20	81.4	74.4		0	33.2		0		23.2		0		23.2		0		23.2		0		23.2
21	79.9	74.9		0	30.8		0		22.3		0		22.3		0		22.3		0		22.3
22	78.4	74.0		0	27.1		0		19.1		0		19.1		0		19.1		0		19.1
23	76.8	72.7		0	24.8		0		15.2		0		15.2		0		15.2		0		15.2
24	75.2	71.6		0	21.9		0		12.8		0		12.8		0		12.8		0		12.8

August	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0	20.7		0	9.3		0	11.6		0	11.6		0	11.6		0	11.6		11.6
2	73.2	70.3		0	16.1		0	8.5		0	8.5		0	8.5		0	8.5		0	8.5		8.5
3	71.7	68.9		0	13.7		0	6.3		0	6.4		0	6.4		0	6.4		0	6.4		6.4
4	70.4	67.8		0	11.8		0	3.6		0	3.6		0	3.6		0	3.6		0	3.6		3.6
5	69.5	66.8		0	10.3		0	2.1		0	2.1		0	2.1		0	2.1		0	2.1		2.1
6	68.9	66.4		0	9.3		0	0.0		0	0.0		0	0.0		0	0.0		0	0.0		0.0
7	68.7	66.4		0	10.0		-3,019	0.0		-3,019	0.0		-3,019	0.0		-3,019	0.0		-3,019	0.0		0.0
8	69.2	66.8		0	13.7		0	1.2		0	1.2		0	1.2		0	1.2		0	1.2		1.2
9	70.8	67.7		0	17.4		0	3.2		0	3.2		0	3.2		0	3.2		0	3.2		3.2
10	73.2	67.7		0	21.7		0	5.8		0	5.8		0	5.8		0	5.8		0	5.8		5.8
11	76.2	68.8		0	25.1		0	8.3		0	8.3		0	8.3		0	8.3		0	8.3		8.3
12	79.3	70.3		0	28.0		0	11.7		0	11.7		0	11.7		0	11.7		0	11.7		11.7
13	82.3	72.2		0	31.5		0	16.0		0	16.0		0	16.0		0	16.0		0	16.0		16.0
14	84.7	73.7		0	35.1		0	19.0		0	19.0		0	19.0		0	19.0		0	19.0		19.0
15	86.3	74.6		0	37.1		0	22.9		0	22.9		0	22.9		0	22.9		0	22.9		22.9
16	86.8	75.1		0	39.7		0	25.4		0	25.4		0	25.4		0	25.4		0	25.4		25.4
17	86.6	75.1		0	39.0		0	26.1		0	26.1		0	26.1		0	26.1		0	26.1		26.1
18	86.0	75.3		0	38.2		0	28.1		0	28.1		0	28.1		0	28.1		0	28.1		28.1
19	85.1	76.0		0	35.8		0	26.8		0	26.8		0	26.8		0	26.8		0	26.8		26.8
20	83.8	76.8		0	32.6		0	25.7		0	25.7		0	25.7		0	25.7		0	25.7		25.7
21	82.3	77.2		0	30.5		0	25.4		0	25.4		0	25.4		0	25.4		0	25.4		25.4
22	80.6	76.3		0	26.9		0	23.1		0	23.1		0	23.1		0	23.1		0	23.1		23.1
23	78.7	75.3		0	23.3		0	19.3		0	19.3		0	19.3		0	19.3		0	19.3		19.3
24	76.8	73.7		0	21.3		0	15.7		0	15.7		0	15.7		0	15.7		0	15.7		15.7

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	10.5	0	2.3	0	3.0	0	3.0	0	3.0
2	67.6	65.0	0	7.6	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	5.8	-17,635	0.0	-17,635	0.0	-17,635	0.0	-17,635	0.0
4	64.3	62.2	0	4.7	-39,031	0.0	-39,031	0.0	-39,031	0.0	-39,031	0.0
5	63.1	61.1	0	3.4	-53,754	0.0	-53,754	0.0	-53,754	0.0	-53,754	0.0
6	62.4	60.3	0	2.9	-4,262	0.0	-4,262	0.0	-4,262	0.0	-4,262	0.0
7	62.2	60.2	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	5.5	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	8.4	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	11.6	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	15.4	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	18.1	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	20.8	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	24.1	0	5.5	0	5.5	0	5.5	0	5.5
15	83.0	70.0	0	27.2	0	11.8	0	11.8	0	11.8	0	11.8
16	83.7	70.5	0	29.3	0	13.7	0	13.7	0	13.7	0	13.7
17	83.4	70.5	0	28.7	0	15.6	0	15.6	0	15.6	0	15.6
18	82.8	70.9	0	27.7	0	16.1	0	16.1	0	16.1	0	16.1
19	81.6	72.7	0	24.6	0	15.8	0	15.8	0	15.8	0	15.8
20	80.1	74.7	0	23.5	0	16.8	0	16.8	0	16.8	0	16.8
21	78.3	74.1	0	20.8	0	15.6	0	15.6	0	15.6	0	15.6
22	76.3	72.4	0	16.7	0	12.2	0	12.2	0	12.2	0	12.2
23	74.1	70.7	0	13.3	0	8.5	0	8.5	0	8.5	0	8.5
24	71.8	68.9	0	11.5	0	5.4	0	5.4	0	5.4	0	5.4

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-7,320	0.0	-123,817	0.0	-123,817	0.0	-123,817	0.0
2	50.1	48.6	0	0.0	0	0.0	-148,676	0.0	-148,676	0.0	-148,676	0.0
3	48.4	46.9	0	0.0	-30,603	0.0	-165,240	0.0	-165,240	0.0	-165,240	0.0
4	47.1	45.8	0	0.0	-186,470	0.0	-186,470	0.0	-186,470	0.0	-186,470	0.0
5	46.3	44.8	-81,548	0.0	-198,691	0.0	-198,691	0.0	-198,691	0.0	-198,691	0.0
6	46.0	44.5	-128,043	0.0	-216,355	0.0	-216,355	0.0	-216,355	0.0	-216,355	0.0
7	46.8	45.3	-128,086	0.0	-218,402	0.0	-218,402	0.0	-218,402	0.0	-218,402	0.0
8	48.9	47.5	-102,666	0.0	-199,286	0.0	-199,286	0.0	-199,286	0.0	-199,286	0.0
9	52.2	49.9	-58,526	0.0	-173,087	0.0	-173,087	0.0	-173,087	0.0	-173,087	0.0
10	56.2	52.5	-17,143	0.0	-140,910	0.0	-140,910	0.0	-140,910	0.0	-140,910	0.0
11	60.4	54.4	0	0.0	-102,341	0.0	-102,341	0.0	-102,341	0.0	-102,341	0.0
12	64.4	56.0	0	0.0	-67,535	0.0	-67,535	0.0	-67,535	0.0	-67,535	0.0
13	67.7	57.3	0	0.0	-37,260	0.0	-37,260	0.0	-37,260	0.0	-37,260	0.0
14	69.8	58.2	0	0.0	-14,621	0.0	-14,621	0.0	-14,621	0.0	-14,621	0.0
15	70.6	58.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	9.8	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	12.3	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	10.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	7.8	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	4.8	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	-9,120	0.0	-19,623	0.0	-19,623	0.0	-19,623	0.0	-19,623	0.0
23	57.0	55.1	-39,933	0.0	-76,345	0.0	-76,345	0.0	-76,345	0.0	-76,345	0.0
24	54.5	52.7	-65,537	0.0	-103,050	0.0	-103,050	0.0	-103,050	0.0	-103,050	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
FAN COIL UNITS

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-94,502	0.0	0	0.0	-139,757	0.0	-139,757	0.0	-139,757	0.0
2	49.4	47.3	-117,205	0.0	-51,615	0.0	-166,270	0.0	-166,270	0.0	-166,270	0.0
3	47.2	45.3	-133,123	0.0	-185,832	0.0	-185,832	0.0	-185,832	0.0	-185,832	0.0
4	45.3	43.4	-152,251	0.0	-208,436	0.0	-208,436	0.0	-208,436	0.0	-208,436	0.0
5	43.9	42.2	-162,035	0.0	-223,221	0.0	-223,221	0.0	-223,221	0.0	-223,221	0.0
6	43.0	41.4	-167,149	0.0	-235,298	0.0	-235,298	0.0	-235,298	0.0	-235,298	0.0
7	42.7	41.2	-167,064	0.0	-249,425	0.0	-249,425	0.0	-249,425	0.0	-249,425	0.0
8	43.5	42.0	-153,403	0.0	-250,001	0.0	-250,001	0.0	-250,001	0.0	-250,001	0.0
9	45.9	44.0	-111,781	0.0	-227,320	0.0	-227,320	0.0	-227,320	0.0	-227,320	0.0
10	49.4	46.6	-67,757	0.0	-203,816	0.0	-203,816	0.0	-203,816	0.0	-203,816	0.0
11	53.8	48.6	-21,040	0.0	-173,989	0.0	-173,989	0.0	-173,989	0.0	-173,989	0.0
12	58.4	50.6	0	0.0	-139,587	0.0	-139,587	0.0	-139,587	0.0	-139,587	0.0
13	62.8	52.6	0	0.0	-105,284	0.0	-105,284	0.0	-105,284	0.0	-105,284	0.0
14	66.3	54.5	0	0.0	-68,345	0.0	-68,345	0.0	-68,345	0.0	-68,345	0.0
15	68.7	55.7	0	0.0	-36,176	0.0	-36,176	0.0	-36,176	0.0	-36,176	0.0
16	69.5	56.1	0	0.0	-18,629	0.0	-18,629	0.0	-18,629	0.0	-18,629	0.0
17	69.2	55.8	0	3.5	-9,130	0.0	-9,130	0.0	-9,130	0.0	-9,130	0.0
18	68.3	57.0	0	6.5	-16,365	0.0	-16,365	0.0	-16,365	0.0	-16,365	0.0
19	66.9	59.4	0	3.8	-23,319	0.0	-23,319	0.0	-23,319	0.0	-23,319	0.0
20	65.0	59.4	0	0.8	-37,377	0.0	-37,377	0.0	-37,377	0.0	-37,377	0.0
21	62.8	58.2	-22,015	0.0	-52,907	0.0	-52,907	0.0	-52,907	0.0	-52,907	0.0
22	60.2	56.1	-56,272	0.0	-75,121	0.0	-75,121	0.0	-75,121	0.0	-75,121	0.0
23	57.5	54.0	-4,934	0.0	-96,109	0.0	-96,109	0.0	-96,109	0.0	-96,109	0.0
24	54.7	51.7	0	0.0	-119,227	0.0	-119,227	0.0	-119,227	0.0	-119,227	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-156,405	0.0	-228,299	0.0	-228,299	0.0	-228,299	0.0	-228,299	0.0
2	43.2	41.1	-176,329	0.0	-245,673	0.0	-245,673	0.0	-245,673	0.0	-245,673	0.0
3	41.8	39.8	-190,364	0.0	-259,317	0.0	-259,317	0.0	-259,317	0.0	-259,317	0.0
4	40.7	38.7	-202,081	0.0	-277,096	0.0	-277,096	0.0	-277,096	0.0	-277,096	0.0
5	40.1	38.4	-217,071	0.0	-287,295	0.0	-287,295	0.0	-287,295	0.0	-287,295	0.0
6	39.9	38.4	-221,856	0.0	-295,717	0.0	-295,717	0.0	-295,717	0.0	-295,717	0.0
7	40.5	39.0	-217,376	0.0	-301,545	0.0	-301,545	0.0	-301,545	0.0	-301,545	0.0
8	42.2	40.7	-213,811	0.0	-294,097	0.0	-294,097	0.0	-294,097	0.0	-294,097	0.0
9	44.9	43.4	-179,979	0.0	-275,592	0.0	-275,592	0.0	-275,592	0.0	-275,592	0.0
10	48.2	45.8	-140,143	0.0	-246,835	0.0	-246,835	0.0	-246,835	0.0	-246,835	0.0
11	51.7	48.3	-104,066	0.0	-218,658	0.0	-218,658	0.0	-218,658	0.0	-218,658	0.0
12	55.0	50.7	-65,905	0.0	-188,299	0.0	-188,299	0.0	-188,299	0.0	-188,299	0.0
13	57.7	52.0	-38,301	0.0	-163,337	0.0	-163,337	0.0	-163,337	0.0	-163,337	0.0
14	59.5	52.6	-10,001	0.0	-142,254	0.0	-142,254	0.0	-142,254	0.0	-142,254	0.0
15	60.1	52.7	0	0.0	-122,265	0.0	-122,265	0.0	-122,265	0.0	-122,265	0.0
16	59.9	52.6	0	0.0	-108,434	0.0	-108,434	0.0	-108,434	0.0	-108,434	0.0
17	59.2	52.1	0	0.0	-101,158	0.0	-101,158	0.0	-101,158	0.0	-101,158	0.0
18	58.2	51.8	0	0.0	-107,521	0.0	-107,521	0.0	-107,521	0.0	-107,521	0.0
19	56.8	52.2	0	0.0	-118,641	0.0	-118,641	0.0	-118,641	0.0	-118,641	0.0
20	55.0	51.4	0	0.0	-132,472	0.0	-132,472	0.0	-132,472	0.0	-132,472	0.0
21	53.1	50.1	-63,697	0.0	-150,771	0.0	-150,771	0.0	-150,771	0.0	-150,771	0.0
22	51.0	48.1	-96,256	0.0	-166,187	0.0	-166,187	0.0	-166,187	0.0	-166,187	0.0
23	48.9	46.2	-122,059	0.0	-191,117	0.0	-191,117	0.0	-191,117	0.0	-191,117	0.0
24	46.9	44.1	-140,500	0.0	-208,956	0.0	-208,956	0.0	-208,956	0.0	-208,956	0.0

BUILDING TEMPERATURE PROFILES - ALTERNATIVE 1
FAN COIL UNITS

----- B U I L D I N G T E M P E R A T U R E P R O F I L E S -----

Temperature ----- Room Number -----
Range 1
(F)

Max. Temp. 75.0
Mo./Hr. 3 16
Day Type 1

..... Number of Hours
Above 100 0
95 - 100 0
90 - 95 0
85 - 90 0
80 - 85 0
75 - 80 0
70 - 75 8,760
65 - 70 0
60 - 65 0
55 - 60 0
50 - 55 0
Below 50 0

Min. Temp. 69.6
Mo./Hr. 1 1
Day Type 1

01 Card - Job Information

 Project: ENERGY STUDY- FISHER HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29816 (1 BUILDING)

-----CARD 08-- Climatic Information -----

Weather	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Code	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	SCHOOL_OFFICES

-----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	202.75	61.5	3	0		11.6	2		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	61.5	12		196	0			
1	2	202.75	12		196	90			
1	3	61.5	12		196	180			
1	4	202.75	12		196	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	2.5	5.5	4	1.03	.82					
1	2	2.5	5.5	22	1.03	.82					
1	3	2.5	5.5	4	1.03	.82					
1	4	2.5	5.5	18	1.03	.82					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	137	PEOPLE	255	325	2.3	WATT-SF	SUSFLUOR				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	26	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		--Reheat Minimum--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		--Room Exhaust--	
	Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	FAN COIL UNITS

-----CARD 40--- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----							
System Set	System	Ventil Deck	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	FC						

-----CARD 41-- Zone Assignment -----

System Set	Ref #1	Ref #2	Ref #3	Ref #4	Ref #5	Ref #6
Number	Begin	End	Begin	End	Begin	End
1	1	1				

-----CARD 42--- Fan SP and Duct Parameters-----

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

FC FAN COIL

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util	Percent
0		100
24		

Trane Air Conditioning Economics
By: Trane Customer Direct Service Network

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**                                     **  
**          TRACE    600    ANALYSIS          **  
**                                     **  
**          by          **  
**                                     **  
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ENERGY STUDY-ALLISON HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29817 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 17:52:58 8/19/94
Dataset Name: FGTPS26 .TM

System 1 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==>		Mo/Hr: 8/16		*		Mo/Hr: 6/18		*		Mo/Hr: 13/ 1		
Outside Air ==>		OADB/WB/HR: 96/ 76/105.0		*		OADB: 96		*		OADB: 23		
				*				*				
	Space	Ret. Air	Ret. Air	Net	Percent	*	Space	Percent	*	Space Peak	Coil Peak	Percent
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	148,997	0		148,997	21.07	*	190,628	30.95	*	-123,251	-123,251	14.54
Glass Solar	128,982	0		128,982	18.24	*	104,414	16.95	*	0	0	0.00
Glass Cond	61,681	0		61,681	8.72	*	65,160	10.58	*	-155,626	-155,626	18.35
Wall Cond	181,181	0		181,181	25.63	*	213,315	34.63	*	-307,666	-307,666	36.28
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	71,591			71,591	10.13	*	42,379	6.88	*	-114,606	-114,606	13.52
Sub Total==>	592,432	0		592,432	83.79	*	615,897	100.00	*	-701,149	-701,149	82.69
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	114,609	16.21	*	0	0.00	*	0	-146,777	17.31
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==>	592,432	0	0	707,041	100.00	*	615,897	100.00	*	-701,149	-847,927	100.00

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf) (%)	
	(Tons)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	77,928	
Main Clg	58.9	707.0	632.7	77,929	75.8	66.5	83.5	67.9	63.9	83.2	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	38,964
Totals	58.9	707.0									Wall	22,956
												3,071
												13

-----AREAS-----

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	--ENGINEERING CHECKS--		--TEMPERATURES (F)--	
	(Mbh)	(cfm)	Deg F	Deg F	Vent	2,940	2,940	Clg % OA	3.8	Type	Clg
Main Htg	-847.9	77,929	66.3	76.1	Infil	1,836	2,296	Clg Cfm/Sqft	1.00	SADB	67.9
Aux Htg	0.0	0	0.0	0.0	Supply	77,929	77,929	Clg Cfm/Ton	1322.61	Plenum	75.0
Preheat	-136.1	77,929	66.3	67.9	Mincfm	0	0	Clg Sqft/Ton	1322.61	Return	75.0
Reheat	0.0	0	0.0	0.0	Return	77,929	77,929	Clg Btuh/Sqft	9.07	Ret/OA	75.8
Humidif	0.0	0	0.0	0.0	Exhaust	2,940	2,940	No. People	196	Runarnd	75.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg % OA	3.8	Fm MtrTD	0.0
Total	-847.9				Auxil	0	0	Htg Cfm/SqFt	1.00	Fm BldTD	0.0
								Htg Btuh/SqFt	-10.88	Fm Frict	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

January		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OA08	OA08	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	33.4	31.1	-732,071	0.0		-448,121	0.0			-448,121	0.0			-448,121	0.0			-448,121	0.0		
2	32.9	30.7	-657,864	0.0		-466,707	0.0			-466,707	0.0			-466,707	0.0			-466,707	0.0		
3	33.1	31.3	-603,268	0.0		-483,393	0.0			-483,393	0.0			-483,393	0.0			-483,393	0.0		
4	33.9	32.1	-563,486	0.0		-483,111	0.0			-483,111	0.0			-483,111	0.0			-483,111	0.0		
5	35.2	33.5	-535,182	0.0		-482,478	0.0			-482,478	0.0			-482,478	0.0			-482,478	0.0		
6	37.0	35.4	-513,146	0.0		-482,412	0.0			-482,412	0.0			-482,412	0.0			-482,412	0.0		
7	39.0	37.6	-495,694	0.0		-482,029	0.0			-482,029	0.0			-482,029	0.0			-482,029	0.0		
8	41.3	40.1	-479,523	0.0		-479,784	0.0			-479,784	0.0			-479,784	0.0			-479,784	0.0		
9	43.7	42.5	-459,461	0.0		-474,905	0.0			-474,905	0.0			-474,905	0.0			-474,905	0.0		
10	46.1	44.0	-432,985	0.0		-465,760	0.0			-465,760	0.0			-465,760	0.0			-465,760	0.0		
11	48.4	45.0	-257,692	0.0		-451,739	0.0			-451,739	0.0			-451,739	0.0			-451,739	0.0		
12	50.5	45.6	-153,664	0.0		-433,268	0.0			-433,268	0.0			-433,268	0.0			-433,268	0.0		
13	52.2	46.1	-78,415	0.0		-309,523	0.0			-309,523	0.0			-309,523	0.0			-309,523	0.0		
14	53.5	46.4	0	0.0		-253,799	0.0			-253,799	0.0			-253,799	0.0			-253,799	0.0		
15	54.3	46.3	0	0.0		-223,903	0.0			-223,903	0.0			-223,903	0.0			-223,903	0.0		
16	54.6	46.1	0	0.0		-189,360	0.0			-189,360	0.0			-189,360	0.0			-189,360	0.0		
17	54.0	45.9	0	0.0		-183,727	0.0			-183,727	0.0			-183,727	0.0			-183,727	0.0		
18	52.5	45.0	0	0.0		-191,530	0.0			-191,530	0.0			-191,530	0.0			-191,530	0.0		
19	50.1	44.8	0	0.0		-213,139	0.0			-213,139	0.0			-213,139	0.0			-213,139	0.0		
20	47.1	43.3	0	0.0		-241,349	0.0			-241,349	0.0			-241,349	0.0			-241,349	0.0		
21	43.7	40.4	0	0.0		-280,517	0.0			-280,517	0.0			-280,517	0.0			-280,517	0.0		
22	40.4	37.3	-102,710	0.0		-331,390	0.0			-331,390	0.0			-331,390	0.0			-331,390	0.0		
23	37.3	34.9	-215,645	0.0		-374,221	0.0			-374,221	0.0			-374,221	0.0			-374,221	0.0		
24	34.9	32.6	-262,643	0.0		-408,294	0.0			-408,294	0.0			-408,294	0.0			-408,294	0.0		

February		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OA08	OA08	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	41.7	38.6	-266,802	0.0		-368,264	0.0			-368,264	0.0			-368,264	0.0			-368,264	0.0		
2	39.7	37.1	-309,436	0.0		-394,276	0.0			-394,276	0.0			-394,276	0.0			-394,276	0.0		
3	37.8	35.1	-337,098	0.0		-433,616	0.0			-433,616	0.0			-433,616	0.0			-433,616	0.0		
4	36.3	33.8	-372,724	0.0		-453,908	0.0			-453,908	0.0			-453,908	0.0			-453,908	0.0		
5	35.1	32.6	-392,571	0.0		-476,058	0.0			-476,058	0.0			-476,058	0.0			-476,058	0.0		
6	34.4	32.0	-411,090	0.0		-480,174	0.0			-480,174	0.0			-480,174	0.0			-480,174	0.0		
7	34.1	31.9	-422,907	0.0		-485,420	0.0			-485,420	0.0			-485,420	0.0			-485,420	0.0		
8	34.6	32.4	-411,082	0.0		-489,668	0.0			-489,668	0.0			-489,668	0.0			-489,668	0.0		
9	36.0	33.8	-366,338	0.0		-490,261	0.0			-490,261	0.0			-490,261	0.0			-490,261	0.0		
10	38.2	34.7	-301,988	0.0		-485,698	0.0			-485,698	0.0			-485,698	0.0			-485,698	0.0		
11	40.9	36.2	-232,677	0.0		-475,559	0.0			-475,559	0.0			-475,559	0.0			-475,559	0.0		
12	43.9	37.4	-140,227	0.0		-459,809	0.0			-459,809	0.0			-459,809	0.0			-459,809	0.0		
13	46.9	39.4	-66,307	0.0		-396,580	0.0			-396,580	0.0			-396,580	0.0			-396,580	0.0		
14	49.7	41.4	0	0.0		-295,645	0.0			-295,645	0.0			-295,645	0.0			-295,645	0.0		
15	51.8	42.8	0	0.0		-245,903	0.0			-245,903	0.0			-245,903	0.0			-245,903	0.0		
16	53.2	43.9	0	0.0		-225,576	0.0			-225,576	0.0			-225,576	0.0			-225,576	0.0		
17	53.7	44.2	0	0.0		-202,812	0.0			-202,812	0.0			-202,812	0.0			-202,812	0.0		
18	53.4	44.4	0	0.0		-197,235	0.0			-197,235	0.0			-197,235	0.0			-197,235	0.0		
19	52.7	44.4	0	0.0		-209,234	0.0			-209,234	0.0			-209,234	0.0			-209,234	0.0		
20	51.5	45.2	0	0.0		-227,607	0.0			-227,607	0.0			-227,607	0.0			-227,607	0.0		
21	50.0	44.6	0	0.0		-247,051	0.0			-247,051	0.0			-247,051	0.0			-247,051	0.0		
22	48.1	43.3	0	0.0		-280,477	0.0			-280,477	0.0			-280,477	0.0			-280,477	0.0		
23	46.1	41.8	-114,536	0.0		-308,964	0.0			-308,964	0.0			-308,964	0.0			-308,964	0.0		
24	43.9	40.1	-232,851	0.0		-339,078	0.0			-339,078	0.0			-339,078	0.0			-339,078	0.0		

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-57,994	0.0	0	0.0	-170,997	0.0	-170,997	0.0	-170,997	0.0
2	48.7	44.6	-93,753	0.0	0	0.0	-212,964	0.0	-212,964	0.0	-212,964	0.0
3	46.6	42.9	-134,098	0.0	0	0.0	-239,537	0.0	-239,537	0.0	-239,537	0.0
4	44.9	41.4	-170,365	0.0	0	0.0	-276,363	0.0	-276,363	0.0	-276,363	0.0
5	43.9	40.8	-192,528	0.0	0	0.0	-298,971	0.0	-298,971	0.0	-298,971	0.0
6	43.5	40.8	-210,118	0.0	-330,690	0.0	-330,690	0.0	-330,690	0.0	-330,690	0.0
7	44.0	41.4	-223,227	0.0	-342,540	0.0	-342,540	0.0	-342,540	0.0	-342,540	0.0
8	45.4	42.7	-197,512	0.0	-333,985	0.0	-333,985	0.0	-333,985	0.0	-333,985	0.0
9	47.7	44.3	-156,351	0.0	-328,909	0.0	-328,909	0.0	-328,909	0.0	-328,909	0.0
10	50.6	45.8	-92,486	0.0	-291,400	0.0	-291,400	0.0	-291,400	0.0	-291,400	0.0
11	53.9	47.4	-9,283	0.0	-234,112	0.0	-234,112	0.0	-234,112	0.0	-234,112	0.0
12	57.4	49.0	0	0.0	-165,245	0.0	-165,245	0.0	-165,245	0.0	-165,245	0.0
13	60.7	50.8	0	0.0	-104,725	0.0	-104,725	0.0	-104,725	0.0	-104,725	0.0
14	63.6	52.7	0	0.0	-39,257	0.0	-39,257	0.0	-39,257	0.0	-39,257	0.0
15	65.9	53.7	0	0.0	-13,229	0.0	-13,229	0.0	-13,229	0.0	-13,229	0.0
16	67.3	54.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	15.5	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	17.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	13.7	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	8.0	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	3.6	0	0.0	0	0.0	0	0.0	0	0.0
23	57.1	51.9	0	0.0	-27,349	0.0	-27,349	0.0	-27,349	0.0	-27,349	0.0
24	54.2	49.4	0	0.0	-135,487	0.0	-135,487	0.0	-135,487	0.0	-135,487	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6	53.5	50.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	53.2	51.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8	53.9	51.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9	55.9	52.1	0	0.0	0	0.0	-66,897	0.0	-66,897	0.0	-66,897	0.0
10	58.9	53.2	0	0.0	-60,810	0.0	-131,833	0.0	-131,833	0.0	-131,833	0.0
11	62.6	55.2	0	0.0	-71,192	0.0	-71,192	0.0	-71,192	0.0	-71,192	0.0
12	66.5	57.3	0	0.0	-14,083	0.0	-14,083	0.0	-14,083	0.0	-14,083	0.0
13	70.2	59.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	12.6	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	34.0	0	0.0	0	0.0	0	0.0	0	0.0
17	75.6	62.0	0	34.6	0	0.0	0	0.0	0	0.0	0	0.0
18	74.9	61.7	0	33.9	0	0.0	0	0.0	0	0.0	0	0.0
19	73.7	62.0	0	30.7	0	0.0	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	26.8	0	0.0	0	0.0	0	0.0	0	0.0
21	70.2	63.3	0	22.2	0	0.0	0	0.0	0	0.0	0	0.0
22	68.0	62.5	0	17.3	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	12.5	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	8.8	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		1.7		0		6.2		0		6.7		0		6.7		0		6.7
2	65.7	61.5		0		13.6		0		2.5		0		2.7		0		2.7		0		2.7
3	63.6	59.7		0		10.1		0		0.0		0		0.0		0		0.0		0		0.0
4	61.8	58.4		0		7.5		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1		0		4.9		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5		0		3.2		0		0.0		0		0.0		0		0.0		0		0.0
7	59.4	56.5		0		4.1		0		0.0		0		0.0		0		0.0		0		0.0
8	60.1	56.3		0		6.2		0		0.0		0		0.0		0		0.0		0		0.0
9	62.4	56.3		0		9.7		0		0.0		0		0.0		0		0.0		0		0.0
10	65.7	57.2		0		14.0		0		0.0		0		0.0		0		0.0		0		0.0
11	69.9	58.9		0		19.9		0		0.0		0		0.0		0		0.0		0		0.0
12	74.3	60.9		0		26.9		0		0.0		0		0.0		0		0.0		0		0.0
13	78.5	63.7		0		32.6		0		0.0		0		0.0		0		0.0		0		0.0
14	81.9	65.3		0		37.9		0		0.0		0		0.0		0		0.0		0		0.0
15	84.1	66.9		0		42.2		0		11.5		0		11.5		0		11.5		0		11.5
16	84.9	67.1		0		44.4		0		22.8		0		22.9		0		22.9		0		22.9
17	84.6	67.3		0		46.4		0		24.0		0		24.1		0		24.1		0		24.1
18	83.8	67.1		0		45.7		0		24.7		0		24.7		0		24.7		0		24.7
19	82.4	67.5		0		44.1		0		24.2		0		24.2		0		24.2		0		24.2
20	80.6	68.9		0		39.0		0		21.4		0		21.4		0		21.4		0		21.4
21	78.5	71.0		0		34.6		0		19.0		0		19.1		0		19.1		0		19.1
22	76.1	69.9		0		30.0		0		16.7		0		16.9		0		16.9		0		16.9
23	73.4	68.0		0		25.1		0		13.2		0		13.3		0		13.3		0		13.3
24	70.8	65.5		0		21.4		0		10.0		0		10.0		0		10.0		0		10.0

June	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		32.4		0		16.7		0		19.5		0		19.5		0		19.5
2	72.6	68.4		0		27.9		0		14.2		0		15.7		0		15.7		0		15.7
3	70.9	67.3		0		24.0		0		10.7		0		11.4		0		11.4		0		11.4
4	69.6	66.5		0		21.5		0		8.1		0		8.5		0		8.5		0		8.5
5	68.7	65.8		0		19.4		0		5.8		0		5.9		0		5.9		0		5.9
6	68.5	65.7		0		17.8		0		2.8		0		2.8		0		2.8		0		2.8
7	69.0	66.3		0		18.9		0		2.5		0		2.6		0		2.6		0		2.6
8	70.6	66.9		0		21.8		0		3.7		0		3.8		0		3.8		0		3.8
9	73.0	67.7		0		24.6		0		5.6		0		5.6		0		5.6		0		5.6
10	76.1	68.1		0		29.8		0		11.4		0		11.5		0		11.5		0		11.5
11	79.5	69.1		0		35.7		0		16.0		0		16.1		0		16.1		0		16.1
12	82.9	70.1		0		41.6		0		20.9		0		21.0		0		21.0		0		21.0
13	86.0	71.0		0		47.0		0		26.5		0		26.6		0		26.6		0		26.6
14	88.4	72.5		0		51.1		0		32.4		0		32.4		0		32.4		0		32.4
15	90.0	74.0		0		55.4		0		36.7		0		36.8		0		36.8		0		36.8
16	90.5	73.7		0		58.6		0		38.5		0		38.5		0		38.5		0		38.5
17	90.3	74.2		0		58.9		0		40.0		0		40.0		0		40.0		0		40.0
18	89.4	73.9		0		58.9		0		40.7		0		40.7		0		40.7		0		40.7
19	88.1	74.5		0		58.3		0		40.6		0		40.6		0		40.6		0		40.6
20	86.4	75.3		0		53.2		0		37.5		0		37.5		0		37.5		0		37.5
21	84.3	76.5		0		48.8		0		35.8		0		35.8		0		35.8		0		35.8
22	81.9	75.7		0		44.1		0		32.8		0		32.8		0		32.8		0		32.8
23	79.5	74.0		0		40.0		0		29.2		0		29.2		0		29.2		0		29.2
24	77.0	72.1		0		35.5		0		24.9		0		24.9		0		24.9		0		24.9

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

July			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	73.7	70.5		0		33.6		0		14.0		0		16.1		0		16.1
2	72.4	69.4		0		28.4		0		12.2		0		13.2		0		13.2
3	71.3	68.4		0		24.5		0		8.5		0		9.0		0		9.0
4	70.5	67.7		0		22.0		0		6.2		0		6.5		0		6.5
5	70.0	67.4		0		20.0		0		4.0		0		4.1		0		4.1
6	69.9	67.5		0		18.3		0		1.9		0		1.9		0		1.9
7	70.3	68.0		0		19.0		0		1.4		0		1.5		0		1.5
8	71.7	69.0		0		21.5		0		3.2		0		3.3		0		3.3
9	73.7	69.5		0		25.1		0		6.7		0		6.8		0		6.8
10	76.2	70.6		0		29.2		0		11.9		0		12.1		0		12.1
11	78.9	71.8		0		33.7		0		17.1		0		17.1		0		17.1
12	81.4	73.0		0		40.1		0		22.4		0		22.4		0		22.4
13	83.4	74.4		0		45.8		0		28.4		0		28.4		0		28.4
14	84.8	74.8		0		49.9		0		32.3		0		32.3		0		32.3
15	85.2	75.0		0		54.3		0		35.5		0		35.5		0		35.5
16	85.1	75.0		0		56.7		0		37.1		0		37.1		0		37.1
17	84.6	74.7		0		58.0		0		37.5		0		37.5		0		37.5
18	83.8	74.6		0		57.8		0		38.1		0		38.1		0		38.1
19	82.7	74.6		0		55.2		0		36.7		0		36.7		0		36.7
20	81.4	74.4		0		51.2		0		34.2		0		34.2		0		34.2
21	79.9	74.9		0		46.9		0		31.8		0		31.8		0		31.8
22	78.4	74.0		0		42.7		0		28.2		0		28.2		0		28.2
23	76.8	72.7		0		38.9		0		23.7		0		23.7		0		23.7
24	75.2	71.6		0		34.4		0		20.1		0		20.1		0		20.1

August			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0		33.3		0		16.4		0		19.1		0		19.1
2	73.2	70.3		0		26.7		0		13.8		0		15.1		0		15.1
3	71.7	68.9		0		23.6		0		10.1		0		10.7		0		10.7
4	70.4	67.8		0		21.2		0		7.5		0		7.8		0		7.8
5	69.5	66.8		0		18.9		0		5.0		0		5.2		0		5.2
6	68.9	66.4		0		17.2		0		3.0		0		3.0		0		3.0
7	68.7	66.4		0		16.9		0		1.2		0		1.2		0		1.2
8	69.2	66.8		0		18.3		0		0.9		0		0.9		0		0.9
9	70.8	67.7		0		22.4		0		2.8		0		2.9		0		2.9
10	73.2	67.7		0		27.6		0		7.5		0		7.6		0		7.6
11	76.2	68.8		0		33.8		0		12.9		0		13.0		0		13.0
12	79.3	70.3		0		40.2		0		19.4		0		19.5		0		19.5
13	82.3	72.2		0		46.4		0		24.8		0		24.9		0		24.9
14	84.7	73.7		0		52.5		0		30.7		0		30.8		0		30.8
15	86.3	74.6		0		55.9		0		35.0		0		35.0		0		35.0
16	86.8	75.1		0		58.9		0		38.2		0		38.2		0		38.2
17	86.6	75.1		0		58.9		0		39.4		0		39.4		0		39.4
18	86.0	75.3		0		58.3		0		40.5		0		40.5		0		40.5
19	85.1	76.0		0		54.8		0		39.5		0		39.5		0		39.5
20	83.8	76.8		0		51.1		0		37.2		0		37.2		0		37.2
21	82.3	77.2		0		47.3		0		34.2		0		34.2		0		34.2
22	80.6	76.3		0		42.1		0		31.0		0		31.0		0		31.0
23	78.7	75.3		0		38.1		0		26.9		0		26.9		0		26.9
24	76.8	73.7		0		33.7		0		23.0		0		23.0		0		23.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

September			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	69.6	67.4		0		23.0		0		6.3		0		7.7		0		7.7		0		7.7
2	67.6	65.0		0		17.2		0		3.7		0		4.4		0		4.4		0		4.4
3	65.8	63.4		0		13.5		0		0.0		0		0.0		0		0.0		0		0.0
4	64.3	62.2		0		10.0		0		0.0		0		0.0		0		0.0		0		0.0
5	63.1	61.1		0		7.9		0		0.0		0		0.0		0		0.0		0		0.0
6	62.4	60.3		0		6.1		0		0.0		0		0.0		0		0.0		0		0.0
7	62.2	60.2		0		5.1		0		0.0		0		0.0		0		0.0		0		0.0
8	62.9	60.9		0		7.4		0		0.0		0		0.0		0		0.0		0		0.0
9	64.7	61.8		0		10.9		0		0.0		0		0.0		0		0.0		0		0.0
10	67.6	62.1		0		16.2		0		0.0		0		0.0		0		0.0		0		0.0
11	71.1	63.1		0		23.0		0		0.0		0		0.0		0		0.0		0		0.0
12	74.8	64.6		0		29.5		0		0.0		0		0.0		0		0.0		0		0.0
13	78.3	66.7		0		36.6		0		0.0		0		0.0		0		0.0		0		0.0
14	81.2	68.4		0		42.4		0		12.9		0		13.3		0		13.3		0		13.3
15	83.0	70.0		0		47.0		0		23.9		0		24.3		0		24.3		0		24.3
16	83.7	70.5		0		49.7		0		26.8		0		27.1		0		27.1		0		27.1
17	83.4	70.5		0		49.2		0		27.8		0		27.9		0		27.9		0		27.9
18	82.8	70.9		0		47.0		0		28.6		0		28.7		0		28.7		0		28.7
19	81.6	72.7		0		43.3		0		26.7		0		26.7		0		26.7		0		26.7
20	80.1	74.7		0		40.4		0		25.6		0		25.7		0		25.7		0		25.7
21	78.3	74.1		0		35.8		0		22.8		0		22.8		0		22.8		0		22.8
22	76.3	72.4		0		31.4		0		20.5		0		20.5		0		20.5		0		20.5
23	74.1	70.7		0		26.1		0		16.2		0		16.2		0		16.2		0		16.2
24	71.8	68.9		0		21.7		0		11.5		0		11.5		0		11.5		0		11.5

October			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	52.2	50.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
2	50.1	48.6		0		0.0		0		0.0		-101,022		0.0		-101,022		0.0		-101,022		0.0
3	48.4	46.9		0		0.0		0		0.0		-206,173		0.0		-206,173		0.0		-206,173		0.0
4	47.1	45.8		0		0.0		0		0.0		-233,076		0.0		-233,076		0.0		-233,076		0.0
5	46.3	44.8		0		0.0		0		0.0		-264,445		0.0		-264,445		0.0		-264,445		0.0
6	46.0	44.5		0		0.0		-90,183		0.0		-289,695		0.0		-289,695		0.0		-289,695		0.0
7	46.8	45.3		0		0.0		-300,477		0.0		-300,477		0.0		-300,477		0.0		-300,477		0.0
8	48.9	47.5		0		0.0		-296,499		0.0		-296,499		0.0		-296,499		0.0		-296,499		0.0
9	52.2	49.9		0		0.0		-268,370		0.0		-268,370		0.0		-268,370		0.0		-268,370		0.0
10	56.2	52.5		0		0.0		-221,352		0.0		-221,352		0.0		-221,352		0.0		-221,352		0.0
11	60.4	54.4		0		0.0		-151,782		0.0		-151,782		0.0		-151,782		0.0		-151,782		0.0
12	64.4	56.0		0		0.0		-76,654		0.0		-76,654		0.0		-76,654		0.0		-76,654		0.0
13	67.7	57.3		0		0.0		-15,373		0.0		-15,373		0.0		-15,373		0.0		-15,373		0.0
14	69.8	58.2		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
15	70.6	58.1		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
16	70.3	57.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
17	69.5	57.3		0		25.4		0		0.0		0		0.0		0		0.0		0		0.0
18	68.2	57.7		0		23.5		0		0.0		0		0.0		0		0.0		0		0.0
19	66.5	60.6		0		19.5		0		0.0		0		0.0		0		0.0		0		0.0
20	64.4	60.8		0		14.7		0		0.0		0		0.0		0		0.0		0		0.0
21	62.1	59.4		0		9.3		0		0.0		0		0.0		0		0.0		0		0.0
22	59.6	57.3		0		5.2		0		0.0		0		0.0		0		0.0		0		0.0
23	57.0	55.1		0		0.6		0		0.0		0		0.0		0		0.0		0		0.0
24	54.5	52.7		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

November			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	52.0	49.2	0	0.0		0	0.0		-160,713	0.0		-160,713	0.0		-160,713	0.0	
2	49.4	47.3	0	0.0		0	0.0		-200,154	0.0		-200,154	0.0		-200,154	0.0	
3	47.2	45.3	-159,430	0.0		0	0.0		-229,475	0.0		-229,475	0.0		-229,475	0.0	
4	45.3	43.4	-187,763	0.0		0	0.0		-264,942	0.0		-264,942	0.0		-264,942	0.0	
5	43.9	42.2	-217,833	0.0		-9,293	0.0		-289,289	0.0		-289,289	0.0		-289,289	0.0	
6	43.0	41.4	-234,896	0.0		-319,956	0.0		-319,960	0.0		-319,960	0.0		-319,960	0.0	
7	42.7	41.2	-244,729	0.0		-337,705	0.0		-337,705	0.0		-337,705	0.0		-337,705	0.0	
8	43.5	42.0	-226,638	0.0		-347,335	0.0		-347,335	0.0		-347,335	0.0		-347,335	0.0	
9	45.9	44.0	-169,432	0.0		-330,268	0.0		-330,268	0.0		-330,268	0.0		-330,268	0.0	
10	49.4	46.6	-95,289	0.0		-287,955	0.0		-287,955	0.0		-287,955	0.0		-287,955	0.0	
11	53.8	48.6	-4,466	0.0		-238,256	0.0		-238,256	0.0		-238,256	0.0		-238,256	0.0	
12	58.4	50.6	0	0.0		-175,735	0.0		-175,735	0.0		-175,735	0.0		-175,735	0.0	
13	62.8	52.6	0	0.0		-113,999	0.0		-113,999	0.0		-113,999	0.0		-113,999	0.0	
14	66.3	54.5	0	0.0		-42,389	0.0		-42,389	0.0		-42,389	0.0		-42,389	0.0	
15	68.7	55.7	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
16	69.5	56.1	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
17	69.2	55.8	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
18	68.3	57.0	0	16.8		0	0.0		0	0.0		0	0.0		0	0.0	
19	66.9	59.4	0	14.6		0	0.0		0	0.0		0	0.0		0	0.0	
20	65.0	59.4	0	8.9		0	0.0		0	0.0		0	0.0		0	0.0	
21	62.8	58.2	0	4.6		0	0.0		0	0.0		0	0.0		0	0.0	
22	60.2	56.1	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
23	57.5	54.0	0	0.0		-99,088	0.0		-99,088	0.0		-99,088	0.0		-99,088	0.0	
24	54.7	51.7	0	0.0		-132,800	0.0		-132,800	0.0		-132,800	0.0		-132,800	0.0	

December			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	44.9	42.5	-185,046	0.0		0	0.0		-298,919	0.0		-298,919	0.0		-298,919	0.0	
2	43.2	41.1	-221,638	0.0		-305,269	0.0		-325,975	0.0		-325,975	0.0		-325,975	0.0	
3	41.8	39.8	-248,836	0.0		-347,536	0.0		-347,536	0.0		-347,536	0.0		-347,536	0.0	
4	40.7	38.7	-271,344	0.0		-378,350	0.0		-378,350	0.0		-378,350	0.0		-378,350	0.0	
5	40.1	38.4	-301,468	0.0		-397,308	0.0		-397,308	0.0		-397,308	0.0		-397,308	0.0	
6	39.9	38.4	-316,414	0.0		-414,916	0.0		-414,916	0.0		-414,916	0.0		-414,916	0.0	
7	40.5	39.0	-315,286	0.0		-431,716	0.0		-431,716	0.0		-431,716	0.0		-431,716	0.0	
8	42.2	40.7	-321,422	0.0		-428,361	0.0		-428,361	0.0		-428,361	0.0		-428,361	0.0	
9	44.9	43.4	-274,461	0.0		-410,034	0.0		-410,034	0.0		-410,034	0.0		-410,034	0.0	
10	48.2	45.8	-204,261	0.0		-367,564	0.0		-367,564	0.0		-367,564	0.0		-367,564	0.0	
11	51.7	48.3	-119,844	0.0		-316,961	0.0		-316,961	0.0		-316,961	0.0		-316,961	0.0	
12	55.0	50.7	-39,516	0.0		-255,346	0.0		-255,346	0.0		-255,346	0.0		-255,346	0.0	
13	57.7	52.0	0	0.0		-201,538	0.0		-201,538	0.0		-201,538	0.0		-201,538	0.0	
14	59.5	52.6	0	0.0		-148,133	0.0		-148,133	0.0		-148,133	0.0		-148,133	0.0	
15	60.1	52.7	0	0.0		-114,031	0.0		-114,031	0.0		-114,031	0.0		-114,031	0.0	
16	59.9	52.6	0	0.0		-79,735	0.0		-79,735	0.0		-79,735	0.0		-79,735	0.0	
17	59.2	52.1	0	0.0		-80,894	0.0		-80,894	0.0		-80,894	0.0		-80,894	0.0	
18	58.2	51.8	0	0.0		-94,608	0.0		-94,608	0.0		-94,608	0.0		-94,608	0.0	
19	56.8	52.2	0	0.0		-113,928	0.0		-113,928	0.0		-113,928	0.0		-113,928	0.0	
20	55.0	51.4	0	0.0		-136,997	0.0		-136,997	0.0		-136,997	0.0		-136,997	0.0	
21	53.1	50.1	0	0.0		-167,116	0.0		-167,116	0.0		-167,116	0.0		-167,116	0.0	
22	51.0	48.1	0	0.0		-200,993	0.0		-200,993	0.0		-200,993	0.0		-200,993	0.0	
23	48.9	46.2	0	0.0		-231,293	0.0		-231,293	0.0		-231,293	0.0		-231,293	0.0	
24	46.9	44.1	0	0.0		-258,353	0.0		-258,353	0.0		-258,353	0.0		-258,353	0.0	

01 Card - Job Information

Project: ENERGY STUDY-ALLISON HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29817 (1 BUILDING)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	SCHOOL_OFFICES

-----CARD 20-- General Room Parameters-----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	315.5	123.5	3	0		11.6	2		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	202.75	12		196	0			
1	2	61.5	12		196	90			
1	3	202.75	12		196	180			
1	4	61.5	12		196	270			
1	5	55	12		196	0			
1	6	52	12		196	90			
1	7	55	12		196	180			
1	8	52	12		196	270			
1	9	55	12		196	0			
1	10	52	12		196	90			
1	11	55	12		196	180			
1	12	52	12		196	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret.	Visible Transmittance	Inside Visible Reflectance
1	1	2.5	5.5	30	1.03	.82					
1	2	2.5	5.5	4	1.03	.82					
1	3	2.5	5.5	30	1.03	.82					
1	4	2.5	5.5	2	1.03	.82					
1	5	11.5	10	1	1.03	.82					
1	6	4.2	10	1	1.03	.82					
1	7	11.5	10	1	1.03	.82					
1	8	4.2	10	1	1.03	.82					
1	9	11.5	10	1	1.03	.82					
1	10	4.2	10	1	1.03	.82					
1	11	11.5	10	1	1.03	.82					
1	12	4.2	10	1	1.03	.82					

-----CARD 26--- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27--- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	98	PEOPLE	255	325	2.3	WATT-SF	SUSFLUOR				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	15	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
	Value	Units	Value	Units	Value	Units	Value	Units		
1	1	CFM-SF	1	CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	SINGLE ZONE SYSTEM

-----CARD 40--- System Type -----

-----OPTIONAL VENTILATION SYSTEM-----							
System Set Number	System Type	Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	SZ						

-----CARD 41-- Zone Assignment -

[illegible]

-----CARD 42--- Fan SP and Duct Parameters

[illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHO FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES

Project: AVAILABLE (100)

Location:

Client:

Program User:

Comments:

Starting Month: JAN Ending Month: HTG

Starting Day Type: DSGN Ending Day Type: SUN

Hour Util Percent

Hour	Util	Percent
0		100
24		

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**
**          T R A C E    6 0 0    A N A L Y S I S          **
**
**          by          **
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JOHNSON HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29818 (1 BLDG)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 14:32:12 8/16/94
Dataset Name: FGTYP27 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==>					Mo/Hr: 7/17		Mo/Hr: 6/18		Mo/Hr: 13/ 1		
Outside Air ==>					OADB/WB/HR: 94/ 75/105.0		OADB: 96		OADB: 23		
	Space	Ret. Air	Ret. Air	Net	Perct		Space	Perct	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot		Sensible	Of Tot	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)		(Btuh)	(%)	(Btuh)	(Btuh)	(%)
Envelope Loads											
Skylite Solr	0	0		0	0.00		0	0.00	0	0	0.00
Skylite Cond	0	0		0	0.00		0	0.00	0	0	0.00
Roof Cond	58,023	0		58,023	13.57		64,614	18.91	-41,777	-41,777	8.85
Glass Solar	79,200	0		79,200	18.52		80,520	23.56	0	0	0.00
Glass Cond	24,065	0		24,065	5.63		28,008	8.20	-66,892	-66,892	14.17
Wall Cond	126,431	0		126,431	29.56		144,082	42.17	-184,720	-184,720	39.14
Partition	0			0	0.00		0	0.00	0	0	0.00
Exposed Floor	0			0	0.00		0	0.00	0	0	0.00
Infiltration	44,844			44,844	10.49		24,477	7.16	-66,194	-66,194	14.03
Sub Total==>	332,563	0		332,563	77.76		341,701	100.00	-359,583	-359,583	76.20
Internal Loads											
Lights	0	0		0	0.00		0	0.00	0	0	0.00
People	0			0	0.00		0	0.00	0	0	0.00
Misc	0	0	0	0	0.00		0	0.00	0	0	0.00
Sub Total==>	0	0	0	0	0.00		0	0.00	0	0	0.00
Ceiling Load	0	0		0	0.00		0	0.00	0	0	0.00
Outside Air	0	0	0	95,125	22.24		0	0.00	0	-112,330	23.80
Sup. Fan Heat				0	0.00			0.00		0	0.00
Ret. Fan Heat		0		0	0.00			0.00		0	0.00
Duct Heat Pkup		0		0	0.00			0.00		0	0.00
OV/UNDR Sizing	0			0	0.00		0	0.00	0	0	0.00
Exhaust Heat		0	0	0	0.00			0.00		0	0.00
Terminal Bypass		0	0	0	-0.00			0.00		0	0.00
Grand Total==>	332,563	0	0	427,688	100.00		341,701	100.00	-359,583	-471,912	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	26,414
Main Clg	35.6	427.7	355.7	26,414	76.6	65.4	76.5	63.3	60.4	74.4	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	13,207
Totals	35.6	427.7									Wall	13,259
												1,320
												10

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)--		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	8.5	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	2,250	2,250	Clg Cfm/Sqft	1.00	SAOB	63.3	80.3
Main Htg	-471.9	26,414	64.2	80.3	Infil	1,061	1,326	Clg Cfm/Ton	741.13	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	26,414	26,414	Clg Sqft/Ton	741.13	Return	75.0	68.0
Preheat	-0.0	26,414	64.2	63.3	Mincfm	0	0	Clg Btuh/Sqft	16.19	Ret/OA	76.6	64.2
Reheat	0.0	0	0.0	0.0	Return	26,414	26,414	No. People	150	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	2,250	2,250	Htg % OA	8.5	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-471.9				Auxil	0	0	Htg Btuh/SqFt	-17.87	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-233,569	0.0	-285,066	0.0	-283,364	0.0	-283,357	0.0	-283,357	0.0
2	32.9	30.7	-231,475	0.0	-285,616	0.0	-284,263	0.0	-284,258	0.0	-284,258	0.0
3	33.1	31.3	-231,081	0.0	-280,832	0.0	-279,757	0.0	-279,752	0.0	-279,752	0.0
4	33.9	32.1	-230,681	0.0	-271,994	0.0	-271,139	0.0	-271,135	0.0	-271,135	0.0
5	35.2	33.5	-229,859	0.0	-260,356	0.0	-259,676	0.0	-259,673	0.0	-259,673	0.0
6	37.0	35.4	-223,320	0.0	-246,224	0.0	-245,683	0.0	-245,681	0.0	-245,681	0.0
7	39.0	37.6	-212,776	0.0	-231,909	0.0	-231,479	0.0	-231,477	0.0	-231,477	0.0
8	41.3	40.1	-195,841	0.0	-215,728	0.0	-215,386	0.0	-215,384	0.0	-215,384	0.0
9	43.7	42.5	-169,844	0.0	-198,840	0.0	-198,568	0.0	-198,566	0.0	-198,566	0.0
10	46.1	44.0	-138,084	0.0	-181,723	0.0	-181,507	0.0	-181,506	0.0	-181,506	0.0
11	48.4	45.0	-101,914	0.0	-164,871	0.0	-164,700	0.0	-164,699	0.0	-164,699	0.0
12	50.5	45.6	-67,969	0.0	-148,900	0.0	-148,763	0.0	-148,763	0.0	-148,763	0.0
13	52.2	46.1	-43,350	0.0	-136,566	0.0	-136,458	0.0	-136,458	0.0	-136,458	0.0
14	53.5	46.4	-26,933	0.0	-127,044	0.0	-126,958	0.0	-126,957	0.0	-126,957	0.0
15	54.3	46.3	-19,646	0.0	-120,839	0.0	-120,771	0.0	-120,771	0.0	-120,771	0.0
16	54.6	46.1	-21,863	0.0	-117,658	0.0	-117,604	0.0	-117,604	0.0	-117,604	0.0
17	54.0	45.9	-30,565	0.0	-121,648	0.0	-121,605	0.0	-121,605	0.0	-121,605	0.0
18	52.5	45.0	-47,616	0.0	-133,555	0.0	-133,521	0.0	-133,521	0.0	-133,521	0.0
19	50.1	44.8	-69,222	0.0	-153,190	0.0	-153,163	0.0	-153,163	0.0	-153,163	0.0
20	47.1	43.3	-91,389	0.0	-177,880	0.0	-177,858	0.0	-177,858	0.0	-177,858	0.0
21	43.7	40.4	-110,630	0.0	-206,128	0.0	-206,111	0.0	-206,111	0.0	-206,111	0.0
22	40.4	37.3	-128,902	0.0	-232,716	0.0	-232,703	0.0	-232,703	0.0	-232,703	0.0
23	37.3	34.9	-143,413	0.0	-256,726	0.0	-256,715	0.0	-256,715	0.0	-256,715	0.0
24	34.9	32.6	-155,239	0.0	-273,833	0.0	-273,824	0.0	-273,824	0.0	-273,824	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-154,247	0.0	-185,792	0.0	-217,079	0.0	-217,203	0.0	-217,203	0.0
2	39.7	37.1	-164,551	0.0	-208,995	0.0	-233,861	0.0	-233,959	0.0	-233,959	0.0
3	37.8	35.1	-173,991	0.0	-230,229	0.0	-249,993	0.0	-250,070	0.0	-250,071	0.0
4	36.3	33.8	-182,359	0.0	-246,693	0.0	-262,404	0.0	-262,466	0.0	-262,466	0.0
5	35.1	32.6	-187,529	0.0	-259,584	0.0	-272,073	0.0	-272,122	0.0	-272,122	0.0
6	34.4	32.0	-187,223	0.0	-267,760	0.0	-277,686	0.0	-277,726	0.0	-277,726	0.0
7	34.1	31.9	-181,830	0.0	-272,575	0.0	-280,466	0.0	-280,497	0.0	-280,497	0.0
8	34.6	32.4	-169,067	0.0	-269,707	0.0	-275,980	0.0	-276,004	0.0	-276,004	0.0
9	36.0	33.8	-148,135	0.0	-257,308	0.0	-262,295	0.0	-262,314	0.0	-262,314	0.0
10	38.2	34.7	-120,050	0.0	-236,758	0.0	-240,719	0.0	-240,735	0.0	-240,735	0.0
11	40.9	36.2	-87,838	0.0	-212,268	0.0	-215,413	0.0	-215,425	0.0	-215,425	0.0
12	43.9	37.4	-57,523	0.0	-186,112	0.0	-188,605	0.0	-188,616	0.0	-188,616	0.0
13	46.9	39.4	-34,260	0.0	-160,721	0.0	-162,698	0.0	-162,706	0.0	-162,706	0.0
14	49.7	41.4	-19,221	0.0	-137,503	0.0	-139,071	0.0	-139,077	0.0	-139,077	0.0
15	51.8	42.8	-11,610	0.0	-120,814	0.0	-122,056	0.0	-122,061	0.0	-122,061	0.0
16	53.2	43.9	-13,446	0.0	-109,973	0.0	-110,958	0.0	-110,962	0.0	-110,962	0.0
17	53.7	44.2	-19,070	0.0	-107,217	0.0	-107,997	0.0	-107,999	0.0	-107,999	0.0
18	53.4	44.4	-32,376	0.0	-110,615	0.0	-111,233	0.0	-111,235	0.0	-111,235	0.0
19	52.7	44.4	-49,448	0.0	-116,855	0.0	-117,345	0.0	-117,347	0.0	-117,347	0.0
20	51.5	45.2	-69,394	0.0	-128,221	0.0	-128,609	0.0	-128,611	0.0	-128,611	0.0
21	50.0	44.6	-86,112	0.0	-142,257	0.0	-142,566	0.0	-142,567	0.0	-142,567	0.0
22	48.1	43.3	-103,441	0.0	-160,142	0.0	-160,387	0.0	-160,389	0.0	-160,389	0.0
23	46.1	41.8	-118,305	0.0	-178,426	0.0	-178,620	0.0	-178,621	0.0	-178,621	0.0
24	43.9	40.1	-129,583	0.0	-197,939	0.0	-198,094	0.0	-198,094	0.0	-198,094	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OA DB	OA WB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-64,023	0.0	-6,021	0.0	-102,535	0.0	-103,555	0.0	-103,571	0.0
2	48.7	44.6	-69,720	0.0	-50,673	0.0	-127,114	0.0	-127,925	0.0	-127,937	0.0
3	46.6	42.9	-75,354	0.0	-81,115	1.2	-146,081	0.0	-146,725	0.0	-146,735	0.0
4	44.9	41.4	-82,362	0.0	-100,716	2.6	-161,024	0.0	-161,536	0.0	-161,544	0.0
5	43.9	40.8	-84,796	0.0	-133,945	0.8	-169,402	0.0	-169,809	0.0	-169,815	0.0
6	43.5	40.8	-81,831	0.0	-151,975	0.0	-172,870	0.0	-173,193	0.0	-173,199	0.0
7	44.0	41.4	-73,724	0.0	-151,674	0.0	-168,287	0.0	-168,544	0.0	-168,548	0.0
8	45.4	42.7	-55,075	0.0	-142,135	0.0	-155,346	0.0	-155,551	0.0	-155,553	0.0
9	47.7	44.3	-25,581	0.0	-123,607	0.0	-134,110	0.0	-134,272	0.0	-134,275	0.0
10	50.6	45.8	0	0.0	-99,390	0.0	-107,735	0.0	-107,864	0.0	-107,866	0.0
11	53.9	47.4	0	0.0	-70,646	0.0	-77,273	0.0	-77,375	0.0	-77,377	0.0
12	57.4	49.0	0	0.0	-40,086	0.0	-45,346	0.0	-45,427	0.0	-45,428	0.0
13	60.7	50.8	0	0.0	-12,629	0.0	-16,802	0.0	-16,866	0.0	-16,867	0.0
14	63.6	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	0.2	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	4.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	8.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	6.3	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	3.7	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	1.0	-13,162	0.0	-15,197	0.0	-15,228	0.0	-15,229	0.0
23	57.1	51.9	0	0.0	-44,502	0.0	-46,119	0.0	-46,144	0.0	-46,144	0.0
24	54.2	49.4	0	0.0	-74,027	0.0	-75,311	0.0	-75,331	0.0	-75,332	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OA DB	OA WB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	54.2	51.4	0	0.0	0	0.0	-2,803	0.0	-2,803	0.0	-2,803	0.0
6	53.5	50.9	0	0.0	-21,586	0.0	-22,937	0.0	-22,937	0.0	-22,937	0.0
7	53.2	51.1	0	0.0	-35,644	0.0	-36,720	0.0	-36,720	0.0	-36,720	0.0
8	53.9	51.5	0	0.0	-37,695	0.0	-38,551	0.0	-38,551	0.0	-38,551	0.0
9	55.9	52.1	0	0.0	-24,816	0.0	-25,496	0.0	-25,496	0.0	-25,496	0.0
10	58.9	53.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11	62.6	55.2	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	1.4	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	13.4	0	0.3	0	0.3	0	0.3	0	0.3
15	75.2	62.2	0	16.7	0	0.6	0	0.6	0	0.6	0	0.6
16	75.9	62.2	0	18.6	0	0.7	0	0.7	0	0.7	0	0.7
17	75.6	62.0	0	19.4	0	0.5	0	0.5	0	0.5	0	0.5
18	74.9	61.7	0	19.6	0	0.2	0	0.2	0	0.2	0	0.2
19	73.7	62.0	0	17.8	0	0.0	0	0.0	0	0.0	0	0.0
20	72.1	62.4	0	15.2	0	1.4	0	1.3	0	1.3	0	1.3
21	70.2	63.3	0	12.7	0	3.9	0	3.9	0	3.9	0	3.9
22	68.0	62.5	0	9.9	0	2.7	0	2.7	0	2.7	0	2.7
23	65.7	60.5	0	7.4	0	0.9	0	0.9	0	0.9	0	0.9
24	63.4	58.5	0	5.1	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

May Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	9.4	0	3.6	0	4.3	0	4.3	0	4.3
2	65.7	61.5	0	8.4	0	2.1	0	2.3	0	2.3	0	2.3
3	63.6	59.7	0	6.6	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	3.5	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	4.0	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	5.9	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	8.6	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	11.7	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	14.5	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	17.3	0	0.0	0	0.0	0	0.0	0	0.0
13	78.5	63.7	0	19.4	0	0.8	0	0.8	0	0.8	0	0.8
14	81.9	65.3	0	21.8	0	7.2	0	7.2	0	7.2	0	7.2
15	84.1	66.9	0	23.7	0	11.7	0	11.7	0	11.7	0	11.7
16	84.9	67.1	0	25.6	0	13.6	0	13.6	0	13.6	0	13.6
17	84.6	67.3	0	26.9	0	14.5	0	14.5	0	14.5	0	14.5
18	83.8	67.1	0	26.8	0	15.0	0	15.0	0	15.0	0	15.0
19	82.4	67.5	0	25.4	0	15.2	0	15.2	0	15.2	0	15.2
20	80.6	68.9	0	22.6	0	14.0	0	14.0	0	14.0	0	14.0
21	78.5	71.0	0	19.9	0	13.9	0	13.9	0	13.9	0	13.9
22	76.1	69.9	0	17.5	0	12.1	0	12.1	0	12.1	0	12.1
23	73.4	68.0	0	15.0	0	9.5	0	9.5	0	9.5	0	9.5
24	70.8	65.5	0	12.6	0	7.0	0	7.0	0	7.0	0	7.0

June Hour	OADB	OAWB	----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
			Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	19.8	0	11.3	0	12.7	0	12.7	0	12.7
2	72.6	68.4	0	17.5	0	10.0	0	10.4	0	10.4	0	10.4
3	70.9	67.3	0	15.5	0	7.8	0	7.9	0	7.9	0	7.9
4	69.6	66.5	0	13.7	0	5.6	0	5.6	0	5.6	0	5.6
5	68.7	65.8	0	12.2	0	4.2	0	4.2	0	4.2	0	4.2
6	68.5	65.7	0	11.5	0	2.4	0	2.4	0	2.4	0	2.4
7	69.0	66.3	0	13.1	0	3.0	0	3.0	0	3.0	0	3.0
8	70.6	66.9	0	16.1	0	4.7	0	4.7	0	4.7	0	4.7
9	73.0	67.7	0	19.0	0	6.5	0	6.5	0	6.5	0	6.5
10	76.1	68.1	0	21.5	0	10.2	0	10.2	0	10.2	0	10.2
11	79.5	69.1	0	24.3	0	12.5	0	12.5	0	12.5	0	12.5
12	82.9	70.1	0	27.1	0	15.0	0	15.0	0	15.0	0	15.0
13	86.0	71.0	0	29.1	0	16.8	0	16.8	0	16.8	0	16.8
14	88.4	72.5	0	30.8	0	20.2	0	20.2	0	20.2	0	20.2
15	90.0	74.0	0	33.2	0	23.3	0	23.3	0	23.3	0	23.3
16	90.5	73.7	0	34.6	0	23.9	0	23.9	0	23.9	0	23.9
17	90.3	74.2	0	35.6	0	25.5	0	25.5	0	25.5	0	25.5
18	89.4	73.9	0	35.6	0	25.9	0	25.9	0	25.9	0	25.9
19	88.1	74.5	0	34.5	0	25.4	0	25.4	0	25.4	0	25.4
20	86.4	75.3	0	31.2	0	24.0	0	24.0	0	24.0	0	24.0
21	84.3	76.5	0	29.6	0	22.7	0	22.7	0	22.7	0	22.7
22	81.9	75.7	0	27.0	0	21.1	0	21.1	0	21.1	0	21.1
23	79.5	74.0	0	24.3	0	18.7	0	18.7	0	18.7	0	18.7
24	77.0	72.1	0	21.9	0	16.0	0	16.0	0	16.0	0	16.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	21.1	0	9.7	0	10.9	0	10.9	0	10.9
2	72.4	69.4	0	17.3	0	8.2	0	8.6	0	8.6	0	8.6
3	71.3	68.4	0	15.5	0	6.7	0	6.8	0	6.8	0	6.8
4	70.5	67.7	0	14.4	0	4.6	0	4.7	0	4.7	0	4.7
5	70.0	67.4	0	13.4	0	3.3	0	3.4	0	3.4	0	3.4
6	69.9	67.5	0	12.1	0	2.2	0	2.2	0	2.2	0	2.2
7	70.3	68.0	0	13.6	0	2.6	0	2.6	0	2.6	0	2.6
8	71.7	69.0	0	16.3	0	4.9	0	4.9	0	4.9	0	4.9
9	73.7	69.5	0	19.1	0	7.1	0	7.1	0	7.1	0	7.1
10	76.2	70.6	0	21.4	0	11.3	0	11.3	0	11.3	0	11.3
11	78.9	71.8	0	23.9	0	13.5	0	13.5	0	13.5	0	13.5
12	81.4	73.0	0	26.6	0	16.2	0	16.2	0	16.2	0	16.2
13	83.4	74.4	0	28.7	0	17.9	0	17.9	0	17.9	0	17.9
14	84.8	74.8	0	30.2	0	20.3	0	20.3	0	20.3	0	20.3
15	85.2	75.0	0	32.1	0	22.2	0	22.2	0	22.2	0	22.2
16	85.1	75.0	0	34.1	0	23.3	0	23.3	0	23.3	0	23.3
17	84.6	74.7	0	35.1	0	23.6	0	23.6	0	23.6	0	23.6
18	83.8	74.6	0	34.5	0	24.1	0	24.1	0	24.1	0	24.1
19	82.7	74.6	0	33.4	0	23.2	0	23.2	0	23.2	0	23.2
20	81.4	74.4	0	31.2	0	22.1	0	22.1	0	22.1	0	22.1
21	79.9	74.9	0	28.8	0	20.2	0	20.2	0	20.2	0	20.2
22	78.4	74.0	0	26.6	0	18.0	0	18.0	0	18.0	0	18.0
23	76.8	72.7	0	24.1	0	15.3	0	15.3	0	15.3	0	15.3
24	75.2	71.6	0	21.8	0	13.2	0	13.2	0	13.2	0	13.2

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	20.4	0	11.2	0	12.7	0	12.7	0	12.7
2	73.2	70.3	0	16.3	0	9.2	0	9.6	0	9.6	0	9.6
3	71.7	68.9	0	14.9	0	7.7	0	7.8	0	7.8	0	7.8
4	70.4	67.8	0	13.3	0	5.4	0	5.4	0	5.4	0	5.4
5	69.5	66.8	0	11.9	0	3.9	0	3.9	0	3.9	0	3.9
6	68.9	66.4	0	11.3	0	2.7	0	2.7	0	2.7	0	2.7
7	68.7	66.4	0	11.9	0	1.3	0	1.3	0	1.3	0	1.3
8	69.2	66.8	0	14.4	0	3.1	0	3.1	0	3.1	0	3.1
9	70.8	67.7	0	17.9	0	5.1	0	5.1	0	5.1	0	5.1
10	73.2	67.7	0	20.6	0	8.1	0	8.1	0	8.1	0	8.1
11	76.2	68.8	0	23.2	0	10.2	0	10.2	0	10.2	0	10.2
12	79.3	70.3	0	25.4	0	12.8	0	12.8	0	12.8	0	12.8
13	82.3	72.2	0	27.9	0	15.7	0	15.7	0	15.7	0	15.7
14	84.7	73.7	0	30.6	0	18.2	0	18.2	0	18.2	0	18.2
15	86.3	74.6	0	32.4	0	21.0	0	21.0	0	21.0	0	21.0
16	86.8	75.1	0	34.5	0	23.2	0	23.2	0	23.2	0	23.2
17	86.6	75.1	0	34.4	0	24.1	0	24.1	0	24.1	0	24.1
18	86.0	75.3	0	34.6	0	25.2	0	25.2	0	25.2	0	25.2
19	85.1	76.0	0	33.0	0	24.3	0	24.3	0	24.3	0	24.3
20	83.8	76.8	0	30.6	0	23.4	0	23.4	0	23.4	0	23.4
21	82.3	77.2	0	28.9	0	21.9	0	21.9	0	21.9	0	21.9
22	80.6	76.3	0	25.8	0	20.1	0	20.1	0	20.1	0	20.1
23	78.7	75.3	0	22.9	0	17.6	0	17.6	0	17.6	0	17.6
24	76.8	73.7	0	21.3	0	15.1	0	15.1	0	15.1	0	15.1

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	13.4	0	4.0	0	5.0	0	5.0	0	5.0
2	67.6	65.0	0	10.0	0	2.0	0	2.3	0	2.3	0	2.3
3	65.8	63.4	0	8.0	0	0.2	0	0.3	0	0.3	0	0.3
4	64.3	62.2	0	6.0	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	3.7	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	3.4	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	6.1	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	9.0	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	12.2	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	15.5	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	17.3	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	19.6	0	0.9	0	0.9	0	0.9	0	0.9
14	81.2	68.4	0	22.4	0	7.9	0	7.9	0	7.9	0	7.9
15	83.0	70.0	0	25.1	0	13.1	0	13.1	0	13.1	0	13.1
16	83.7	70.5	0	27.0	0	14.6	0	14.6	0	14.6	0	14.6
17	83.4	70.5	0	27.0	0	16.1	0	16.1	0	16.1	0	16.1
18	82.8	70.9	0	26.4	0	16.5	0	16.5	0	16.5	0	16.5
19	81.6	72.7	0	24.3	0	15.9	0	15.9	0	15.9	0	15.9
20	80.1	74.7	0	23.0	0	15.5	0	15.5	0	15.5	0	15.5
21	78.3	74.1	0	21.0	0	14.5	0	14.5	0	14.5	0	14.5
22	76.3	72.4	0	17.9	0	12.2	0	12.2	0	12.2	0	12.2
23	74.1	70.7	0	14.8	0	9.6	0	9.6	0	9.6	0	9.6
24	71.8	68.9	0	12.8	0	7.2	0	7.2	0	7.2	0	7.2

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-80,610	0.0	-81,898	0.0	-81,926	0.0
2	50.1	48.6	0	0.0	-32,652	0.0	-101,622	0.0	-102,648	0.0	-102,671	0.0
3	48.4	46.9	0	0.0	-63,201	0.0	-118,233	0.0	-119,049	0.0	-119,067	0.0
4	47.1	45.8	0	0.0	-81,997	1.5	-130,980	0.0	-131,630	0.0	-131,644	0.0
5	46.3	44.8	0	0.0	-94,819	2.5	-139,264	0.0	-139,781	0.0	-139,793	0.0
6	46.0	44.5	-11,924	0.0	-125,118	0.0	-143,618	0.0	-144,030	0.0	-144,039	0.0
7	46.8	45.3	-12,903	0.0	-123,097	0.0	-137,813	0.0	-138,141	0.0	-138,148	0.0
8	48.9	47.5	-2,679	0.0	-108,050	0.0	-119,760	0.0	-120,020	0.0	-120,026	0.0
9	52.2	49.9	0	0.0	-81,123	0.0	-90,437	0.0	-90,644	0.0	-90,649	0.0
10	56.2	52.5	0	0.0	-47,782	0.0	-55,187	0.0	-55,351	0.0	-55,355	0.0
11	60.4	54.4	0	0.0	-12,947	0.0	-18,830	0.0	-18,961	0.0	-18,964	0.0
12	64.4	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	0	1.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	1.5	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	2.3	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	10.3	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	8.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	6.1	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	3.4	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	1.3	0	0.0	-2,949	0.0	-3,006	0.0	-3,007	0.0
23	57.0	55.1	0	0.0	-30,143	0.0	-32,174	0.0	-32,220	0.0	-32,221	0.0
24	54.5	52.7	0	0.0	-56,938	0.0	-58,555	0.0	-58,591	0.0	-58,592	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-46,210	0.0	-22,249	0.0	-112,315	0.0	-113,323	0.0	-113,336	0.0
2	49.4	47.3	-60,953	0.0	-62,061	0.3	-134,309	0.0	-135,111	0.0	-135,121	0.0
3	47.2	45.3	-74,082	0.0	-86,923	2.0	-152,162	0.0	-152,801	0.0	-152,809	0.0
4	45.3	43.4	-85,070	0.0	-124,068	0.5	-167,301	0.0	-167,809	0.0	-167,815	0.0
5	43.9	42.2	-91,488	0.0	-147,275	0.0	-177,924	0.0	-178,328	0.0	-178,334	0.0
6	43.0	41.4	-89,236	0.0	-160,058	0.0	-184,450	0.0	-184,772	0.0	-184,777	0.0
7	42.7	41.2	-81,020	0.0	-166,766	0.0	-186,179	0.0	-186,434	0.0	-186,438	0.0
8	43.5	42.0	-62,632	0.0	-162,870	0.0	-178,318	0.0	-178,522	0.0	-178,524	0.0
9	45.9	44.0	-32,718	0.0	-142,685	0.0	-154,976	0.0	-155,139	0.0	-155,141	0.0
10	49.4	46.6	0	0.0	-112,059	0.0	-121,837	0.0	-121,966	0.0	-121,967	0.0
11	53.8	48.6	0	0.0	-74,199	0.0	-81,972	0.0	-82,074	0.0	-82,075	0.0
12	58.4	50.6	0	0.0	-36,161	0.0	-42,335	0.0	-42,417	0.0	-42,417	0.0
13	62.8	52.6	0	0.0	0	0.0	-6,284	0.0	-6,348	0.0	-6,348	0.0
14	66.3	54.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.8	58.2	0	0.0	-7,845	0.0	-10,357	0.0	-10,391	0.0	-10,392	0.0
22	60.2	56.1	0	0.0	-35,289	0.0	-37,287	0.0	-37,314	0.0	-37,314	0.0
23	57.5	54.0	0	0.0	-62,037	0.0	-63,627	0.0	-63,648	0.0	-63,649	0.0
24	54.7	51.7	0	0.0	-88,322	0.0	-89,588	0.0	-89,605	0.0	-89,605	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-115,424	0.0	-169,210	0.0	-183,923	0.0	-183,983	0.0	-183,983	0.0
2	43.2	41.1	-123,758	0.0	-186,140	0.0	-197,840	0.0	-197,887	0.0	-197,888	0.0
3	41.8	39.8	-131,387	0.0	-199,558	0.0	-208,862	0.0	-208,899	0.0	-208,899	0.0
4	40.7	38.7	-137,755	0.0	-210,146	0.0	-217,546	0.0	-217,576	0.0	-217,576	0.0
5	40.1	38.4	-141,778	0.0	-216,255	0.0	-222,141	0.0	-222,165	0.0	-222,165	0.0
6	39.9	38.4	-138,557	0.0	-218,902	0.0	-223,584	0.0	-223,603	0.0	-223,603	0.0
7	40.5	39.0	-131,550	0.0	-214,551	0.0	-218,275	0.0	-218,290	0.0	-218,290	0.0
8	42.2	40.7	-117,897	0.0	-200,364	0.0	-203,325	0.0	-203,338	0.0	-203,338	0.0
9	44.9	43.4	-96,139	0.0	-177,186	0.0	-179,541	0.0	-179,551	0.0	-179,551	0.0
10	48.2	45.8	-68,735	0.0	-148,795	0.0	-150,667	0.0	-150,675	0.0	-150,675	0.0
11	51.7	48.3	-35,584	0.0	-119,133	0.0	-120,621	0.0	-120,627	0.0	-120,627	0.0
12	55.0	50.7	-5,470	0.0	-92,086	0.0	-93,267	0.0	-93,272	0.0	-93,272	0.0
13	57.7	52.0	0	0.0	-71,188	0.0	-72,127	0.0	-72,130	0.0	-72,130	0.0
14	59.5	52.6	0	0.0	-58,889	0.0	-59,634	0.0	-59,637	0.0	-59,637	0.0
15	60.1	52.7	0	0.0	-56,897	0.0	-57,488	0.0	-57,490	0.0	-57,490	0.0
16	59.9	52.6	0	0.0	-60,147	0.0	-60,617	0.0	-60,619	0.0	-60,619	0.0
17	59.2	52.1	0	0.0	-65,888	0.0	-66,261	0.0	-66,262	0.0	-66,262	0.0
18	58.2	51.8	0	0.0	-73,369	0.0	-73,665	0.0	-73,666	0.0	-73,666	0.0
19	56.8	52.2	0	0.0	-84,715	0.0	-84,950	0.0	-84,951	0.0	-84,951	0.0
20	55.0	51.4	-13,637	0.0	-99,812	0.0	-100,000	0.0	-100,000	0.0	-100,000	0.0
21	53.1	50.1	-36,572	0.0	-115,686	0.0	-115,835	0.0	-115,836	0.0	-115,836	0.0
22	51.0	48.1	-56,467	0.0	-133,282	0.0	-133,400	0.0	-133,400	0.0	-133,400	0.0
23	48.9	46.2	-72,461	0.0	-150,472	0.0	-150,566	0.0	-150,566	0.0	-150,566	0.0
24	46.9	44.1	-85,193	0.0	-167,000	0.0	-167,075	0.0	-167,075	0.0	-167,075	0.0

01 Card - Job Information

Project: JOHNSON HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29818 (1 BLDG)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	0AHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	JOHNSON HALL

-----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	214.75	61.5	3	0		11.6	2		

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor	
1		50		CLGCONST			HTGCONST			LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Multiplier	Reflectance
1	1	61.5	12		196	0				
1	2	214.75	12		196	90				
1	3	61.5	12		196	180				
1	4	214.7	12		196	270				

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of	U-Value	Coefficient	Shading	Shading	Solar to	Transmittance	Visible
				Windows			Type	Type	Ret. Air		Reflectance
1	1	2.5	5.5	4	1.03	.82					
1	2	2.5	5.5	22	1.03	.82					
1	3	2.5	5.5	4	1.03	.82					
1	4	2.5	5.5	18	1.03	.82					

-----CARD 26-- Schedules -----

Room	People	Lights	Ventilation	Infiltration	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	Value	Value	Value	Value	Minimum	Fans	Fan	Fan	Exhaust	Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Ballast	Percent	--- Daylighting ---
Number	Value	Units	Sensible	Latent	Value	Units	Type	Factor	Lights to	Reference
									Ret. Air	Point 1
1	75	PEOPLE	255	325	2.3	WATT-SF	SUSFLUOR			Point 2

Room Number	Misc Equipment Number	Misc Equipment Descrip	Energy Consump Value	Energy Consump Units	Energy Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	88	KW	FGHEAT						

Room Number	Ventilation				Infiltration				Reheat Minimum	
	Cooling		Heating		Cooling		Heating		Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

Room Number	Main				Auxiliary				Room Exhaust	
	Cooling		Heating		Cooling		Heating		Value	Units
1	1	CFM-SF	1	CFM-SF						

Number	Description
1	MULTI ZONE SYSTEM

System		-----OPTIONAL VENTILATION SYSTEM-----					Fan
Set	System	Ventil					
Number	Type	Deck	Cooling	Heating	Cooling	Heating	Static
		Location	SADBvh	SADBvh	Schedule	Schedule	Pressure
1	MZ						

[illegible]

-----CARD 42--- Fan SP and Duct Parameters-----

System	Cool	Heat	Return	Mn Exh	Aux	Rm Exh	Cool	Return	Supply	Supply	Return
Set	Fan	Fan	Fan	Fan	Fan	Fan	Fan Mtr	Fan Mtr	Duct	Duct	Air
Number	SP	SP	SP	SP	SP	SP	Loc	Loc	Ht Gn	Loc	Path

1

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

MZ MULTIZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHD FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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*****
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**
**          T R A C E    6 0 0    A N A L Y S I S          **
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**          by          **
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STANSELL HALL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 29818 (1 BLDG)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 14:47:28 8/16/94
Dataset Name: FGTYPS28 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)					Mo/Hr: 8/16	*	Mo/Hr: 6/19					*	Mo/Hr: 13/ 1								
Outside Air ==)					OADB/WB/HR: 96/ 76/105.0					*	OADB: 93					*	OADB: 23				
						*						*									
	Space	Ret. Air	Ret. Air	Net	Percnt	*	Space	Percnt	*	Space Peak	Coil Peak	Percnt									
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot									
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)									
Envelope Loads						*			*												
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00									
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00									
Roof Cond	67,377	0		67,377	18.39	*	86,574	30.03	*	-55,735	-55,735	10.18									
Glass Solar	0	0		0	0.00	*	0	0.00	*	0	0	0.00									
Glass Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00									
Wall Cond	145,880	0		145,880	39.81	*	175,171	60.76	*	-258,448	-258,448	47.22									
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00									
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00									
Infiltration	47,213			47,213	12.88	*	26,538	9.21	*	-83,394	-83,394	15.24									
Sub Total==)	260,469	0		260,469	71.08	*	288,283	100.00	*	-397,577	-397,577	72.64									
Internal Loads						*			*												
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00									
People	0			0	0.00	*	0	0.00	*	0	0	0.00									
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00									
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00									
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00									
Outside Air	0	0	0	105,991	28.92	*	0	0.00	*	0	-149,773	27.36									
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00									
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00									
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00									
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00									
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00									
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00									
						*			*												
Grand Total==)	260,470	0	0	366,461	100.00	*	288,283	100.00	*	-397,577	-547,349	100.00									

-----COOLING COIL SELECTION-----

	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	35,239
Main Clg	30.5	366.5	314.8	35,240	76.8	68.0	89.4	67.6	65.0	89.1	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	17,620
Totals	30.5	366.5									Wall	16,704

-----AREAS-----

-----HEATING COIL SELECTION-----

	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	8.5	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	3,000	3,000	Clg Cfm/Sqft	1.00	SADB	67.6	78.2
Main Htg	-412.2	35,240	67.6	78.2	Infil	1,336	1,670	Clg Cfm/Ton	1153.94	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	35,240	35,240	Clg Sqft/Ton	1153.94	Return	75.0	68.0
Preheat	-135.2	35,240	64.2	67.6	Mincfm	0	0	Clg Btuh/Sqft	10.40	Ret/OA	76.8	64.2
Reheat	0.0	0	0.0	0.0	Return	35,240	35,240	No. People	200	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	3,000	3,000	Htg % OA	8.5	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/Sqft	1.00	Fn BldTD	0.0	0.0
Total	-547.3				Auxil	0	0	Htg Btuh/Sqft	-15.53	Fn Frict	0.0	0.0

-----AIRFLOWS (cfm)-----

-----ENGINEERING CHECKS-----

-----TEMPERATURES (F)-----

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-269,914	0.0	-328,610	0.0	-321,626	0.0	-321,593	0.0	-321,593	0.0
2	32.9	30.7	-265,935	0.0	-326,293	0.0	-320,699	0.0	-320,672	0.0	-320,672	0.0
3	33.1	31.3	-263,881	0.0	-319,043	0.0	-314,562	0.0	-314,540	0.0	-314,540	0.0
4	33.9	32.1	-261,807	0.0	-307,647	0.0	-304,056	0.0	-304,038	0.0	-304,038	0.0
5	35.2	33.5	-259,733	0.0	-293,441	0.0	-290,562	0.0	-290,548	0.0	-290,548	0.0
6	37.0	35.4	-251,416	0.0	-276,728	0.0	-274,422	0.0	-274,411	0.0	-274,411	0.0
7	39.0	37.6	-238,798	0.0	-260,125	0.0	-258,277	0.0	-258,268	0.0	-258,268	0.0
8	41.3	40.1	-219,039	0.0	-242,098	0.0	-240,618	0.0	-240,611	0.0	-240,611	0.0
9	43.7	42.5	-191,203	0.0	-224,926	0.0	-223,740	0.0	-223,734	0.0	-223,734	0.0
10	46.1	44.0	-159,792	0.0	-209,164	0.0	-208,079	0.0	-208,079	0.0	-208,079	0.0
11	48.4	45.0	-124,835	0.0	-194,210	0.0	-193,449	0.0	-193,445	0.0	-193,445	0.0
12	50.5	45.6	-92,222	0.0	-179,937	0.0	-179,329	0.0	-179,327	0.0	-179,327	0.0
13	52.2	46.1	-68,653	0.0	-168,268	0.0	-167,781	0.0	-167,778	0.0	-167,778	0.0
14	53.5	46.4	-52,833	0.0	-158,619	0.0	-158,230	0.0	-158,228	0.0	-158,228	0.0
15	54.3	46.3	-46,691	0.0	-151,926	0.0	-151,615	0.0	-151,614	0.0	-151,614	0.0
16	54.6	46.1	-50,976	0.0	-148,313	0.0	-148,064	0.0	-148,063	0.0	-148,063	0.0
17	54.0	45.9	-61,959	0.0	-152,986	0.0	-152,787	0.0	-152,786	0.0	-152,786	0.0
18	52.5	45.0	-80,448	0.0	-165,456	0.0	-165,297	0.0	-165,296	0.0	-165,296	0.0
19	50.1	44.8	-101,811	0.0	-186,096	0.0	-185,969	0.0	-185,968	0.0	-185,968	0.0
20	47.1	43.3	-123,149	0.0	-212,293	0.0	-212,191	0.0	-212,191	0.0	-212,191	0.0
21	43.7	40.4	-140,983	0.0	-242,177	0.0	-242,096	0.0	-242,095	0.0	-242,095	0.0
22	40.4	37.3	-157,883	0.0	-270,408	0.0	-270,342	0.0	-270,342	0.0	-270,342	0.0
23	37.3	34.9	-170,694	0.0	-295,945	0.0	-295,893	0.0	-295,893	0.0	-295,893	0.0
24	34.9	32.6	-181,150	0.0	-313,275	0.0	-313,233	0.0	-313,233	0.0	-313,233	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-173,122	0.0	-225,060	0.0	-259,060	0.0	-259,221	0.0	-259,221	0.0
2	39.7	37.1	-184,905	0.0	-248,883	0.0	-276,112	0.0	-276,241	0.0	-276,242	0.0
3	37.8	35.1	-195,783	0.0	-270,894	0.0	-292,701	0.0	-292,805	0.0	-292,806	0.0
4	36.3	33.8	-205,564	0.0	-287,756	0.0	-305,224	0.0	-305,306	0.0	-305,307	0.0
5	35.1	32.6	-211,334	0.0	-300,830	0.0	-314,823	0.0	-314,889	0.0	-314,889	0.0
6	34.4	32.0	-211,003	0.0	-308,679	0.0	-319,886	0.0	-319,939	0.0	-319,939	0.0
7	34.1	31.9	-204,978	0.0	-312,815	0.0	-321,792	0.0	-321,835	0.0	-321,835	0.0
8	34.6	32.4	-190,610	0.0	-308,534	0.0	-315,726	0.0	-315,760	0.0	-315,760	0.0
9	36.0	33.8	-169,536	0.0	-295,330	0.0	-301,089	0.0	-301,117	0.0	-301,117	0.0
10	38.2	34.7	-143,934	0.0	-275,488	0.0	-280,100	0.0	-280,122	0.0	-280,122	0.0
11	40.9	36.2	-115,190	0.0	-252,067	0.0	-255,756	0.0	-255,774	0.0	-255,774	0.0
12	43.9	37.4	-87,904	0.0	-226,070	0.0	-229,019	0.0	-229,032	0.0	-229,032	0.0
13	46.9	39.4	-66,532	0.0	-200,202	0.0	-202,558	0.0	-202,569	0.0	-202,569	0.0
14	49.7	41.4	-52,556	0.0	-175,784	0.0	-177,667	0.0	-177,675	0.0	-177,675	0.0
15	51.8	42.8	-45,649	0.0	-157,724	0.0	-159,655	0.0	-159,662	0.0	-159,662	0.0
16	53.2	43.9	-49,230	0.0	-146,965	0.0	-148,165	0.0	-148,171	0.0	-148,171	0.0
17	53.7	44.2	-57,661	0.0	-144,679	0.0	-145,637	0.0	-145,642	0.0	-145,642	0.0
18	53.4	44.4	-74,185	0.0	-149,320	0.0	-150,086	0.0	-150,090	0.0	-150,090	0.0
19	52.7	44.4	-92,442	0.0	-156,128	0.0	-156,741	0.0	-156,744	0.0	-156,744	0.0
20	51.5	45.2	-111,519	0.0	-167,614	0.0	-168,104	0.0	-168,106	0.0	-168,106	0.0
21	50.0	44.6	-125,756	0.0	-181,725	0.0	-182,116	0.0	-182,118	0.0	-182,118	0.0
22	48.1	43.3	-141,150	0.0	-199,739	0.0	-200,052	0.0	-200,054	0.0	-200,054	0.0
23	46.1	41.8	-154,275	0.0	-218,353	0.0	-218,604	0.0	-218,605	0.0	-218,605	0.0
24	43.9	40.1	-163,432	0.0	-239,069	0.0	-239,270	0.0	-239,271	0.0	-239,271	0.0

March			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	51.3	46.8	-82,409		0.0		-37,436		0.0		-143,051		0.0		-144,222		0.0		-144,235		0.0	
2	48.7	44.6	-88,020		0.0		-80,263		0.0		-165,915		0.0		-166,852		0.0		-166,863		0.0	
3	46.6	42.9	-93,294		0.0		-115,944		0.0		-183,220		0.0		-183,971		0.0		-183,979		0.0	
4	44.9	41.4	-100,014		0.0		-142,745		0.0		-196,629		0.0		-197,230		0.0		-197,237		0.0	
5	43.9	40.8	-101,397		0.0		-159,883		0.0		-203,046		0.0		-203,527		0.0		-203,533		0.0	
6	43.5	40.8	-96,504		0.0		-169,681		0.0		-204,258		0.0		-204,644		0.0		-204,648		0.0	
7	44.0	41.4	-86,065		0.0		-169,267		0.0		-196,969		0.0		-197,278		0.0		-197,281		0.0	
8	45.4	42.7	-66,112		0.0		-159,569		0.0		-181,768		0.0		-182,015		0.0		-182,018		0.0	
9	47.7	44.3	-37,696		0.0		-141,329		0.0		-159,111		0.0		-159,309		0.0		-159,311		0.0	
10	50.6	45.8	-3,620		0.0		-118,525		0.0		-132,762		0.0		-132,920		0.0		-132,922		0.0	
11	53.9	47.4	0		0.0		-92,235		0.0		-103,628		0.0		-103,755		0.0		-103,757		0.0	
12	57.4	49.0	0		0.0		-63,521		0.0		-72,634		0.0		-72,735		0.0		-72,737		0.0	
13	60.7	50.8	0		0.0		-36,534		0.0		-43,819		0.0		-43,900		0.0		-43,901		0.0	
14	63.6	52.7	0		0.0		-13,132		0.0		-18,953		0.0		-19,018		0.0		-19,019		0.0	
15	65.9	53.7	0		0.0		0		0.0		0		0.0		0		0.0		0		0.0	
16	67.3	54.4	0		0.0		0		0.0		0		0.0		0		0.0		0		0.0	
17	67.8	54.6	0		0.0		0		0.0		0		0.0		0		0.0		0		0.0	
18	67.4	54.8	0		0.0		0		0.0		0		0.0		0		0.0		0		0.0	
19	66.4	55.2	0		0.0		0		0.0		0		0.0		0		0.0		0		0.0	
20	64.7	56.0	0		0.0		-12,030		0.0		-15,595		0.0		-15,635		0.0		-15,635		0.0	
21	62.5	56.0	0		0.0		-35,238		0.0		-38,092		0.0		-38,124		0.0		-38,124		0.0	
22	60.0	54.1	0		0.0		-60,526		0.0		-62,810		0.0		-62,836		0.0		-62,836		0.0	
23	57.1	51.9	0		0.0		-89,019		0.0		-90,847		0.0		-90,868		0.0		-90,868		0.0	
24	54.2	49.4	0		0.0		-116,258		0.0		-117,721		0.0		-117,737		0.0		-117,738		0.0	

April			----- Design -----		----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	61.0	56.5	0	0.0		0.0		0		0.0		0		0.0		0		0.0
2	58.9	54.9	0	0.0		0.0		0		0.0		0		0.0		0		0.0
3	57.0	53.5	0	0.0		0.0		0		0.0		0		0.0		0		0.0
4	55.4	52.4	0	0.0		0.0		0		0.0		-15,384		0.0		-22,570		0.0
5	54.2	51.4	0	0.0		0.0		0		0.0		-38,186		0.0		-43,947		0.0
6	53.5	50.9	0	0.0		0.0		0		0.0		-53,822		0.0		-58,443		0.0
7	53.2	51.1	0	0.0		0.0		-21,357		0.0		-64,267		0.0		-67,973		0.0
8	53.9	51.5	0	0.0		0.0		-28,477		0.0		-62,886		0.0		-65,857		0.0
9	55.9	52.1	0	0.0		0.0		-20,009		0.0		-47,584		0.0		-49,965		0.0
10	58.9	53.2	0	0.0		0.0		0		0.0		-22,108		0.0		-24,014		0.0
11	62.6	55.2	0	0.0		0.0		0		0.0		0		0.0		0		0.0
12	66.5	57.3	0	0.0		0.0		0		0.0		0		0.0		0		0.0
13	70.2	59.6	0	0.0		0.0		0		0.0		0		0.0		0		0.0
14	73.2	61.0	0	3.5		0.0		0		0.0		0		0.0		0		0.0
15	75.2	62.2	0	3.5		0.0		0		0.0		0		0.0		0		0.0
16	75.9	62.2	0	3.2		0.0		0		0.0		0		0.0		0		0.0
17	75.6	62.0	0	2.5		0.0		0		0.0		0		0.0		0		0.0
18	74.9	61.7	0	6.5		0.0		0		0.0		0		0.0		0		0.0
19	73.7	62.0	0	14.0		0.0		0		0.0		0		0.0		0		0.0
20	72.1	62.4	0	12.3		0.0		0		0.0		0		0.0		0		0.0
21	70.2	63.3	0	10.6		0.0		0		0.0		0		0.0		0		0.0
22	68.0	62.5	0	8.1		0.0		0		0.0		0		0.0		0		0.0
23	65.7	60.5	0	6.1		0.0		0		0.0		0		0.0		0		0.0
24	63.4	58.5	0	3.8		0.0		0		0.0		0		0.0		0		0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

May	----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton		
1	68.2	63.5		0		0.0		0		2.9		0		3.4		0		3.4		
2	65.7	61.5		0		0.0		0		1.2		0		1.4		0		1.4		
3	63.6	59.7		0		0.0		0		0.0		0		0.0		0		0.0		
4	61.8	58.4		0		0.0		0		0.0		0		0.0		0		0.0		
5	60.5	57.1		0		0.0		0		0.0		0		0.0		0		0.0		
6	59.7	56.5		0		0.0		0		0.0		0		0.0		0		0.0		
7	59.4	56.5		0		0.0		0		0.0		0		0.0		0		0.0		
8	60.1	56.3		0		0.0		0		0.0		0		0.0		0		0.0		
9	62.4	56.3		0		1.3		0		0.0		0		0.0		0		0.0		
10	65.7	57.2		0		5.7		0		0.0		0		0.0		0		0.0		
11	69.9	58.9		0		8.5		0		0.0		0		0.0		0		0.0		
12	74.3	60.9		0		11.5		0		0.3		0		0.3		0		0.3		
13	78.5	63.7		0		14.6		0		1.5		0		1.5		0		1.5		
14	81.9	65.3		0		17.4		0		2.3		0		2.3		0		2.3		
15	84.1	66.9		0		20.1		0		2.9		0		2.9		0		2.9		
16	84.9	67.1		0		21.5		0		3.0		0		3.0		0		3.0		
17	84.6	67.3		0		22.4		0		2.8		0		2.8		0		2.8		
18	83.8	67.1		0		22.6		0		5.4		0		5.4		0		5.4		
19	82.4	67.5		0		21.8		0		11.0		0		11.0		0		11.0		
20	80.6	68.9		0		20.5		0		10.4		0		10.4		0		10.4		
21	78.5	71.0		0		18.4		0		10.5		0		10.5		0		10.5		
22	76.1	69.9		0		16.1		0		10.0		0		10.0		0		10.0		
23	73.4	68.0		0		14.1		0		7.4		0		7.4		0		7.4		
24	70.8	65.5		0		11.8		0		5.6		0		5.6		0		5.6		

June	----- Design -----				----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1			0	20.3		0		11.0		0		12.9		0		12.9
2	72.6	68.4			0	17.3		0		9.2		0		9.7		0		9.7
3	70.9	67.3			0	15.7		0		7.5		0		7.6		0		7.6
4	69.6	66.5			0	13.9		0		5.8		0		5.8		0		5.8
5	68.7	65.8			0	12.4		0		3.7		0		3.7		0		3.7
6	68.5	65.7			0	11.7		0		2.6		0		2.6		0		2.6
7	69.0	66.3			0	11.7		0		1.2		0		1.2		0		1.2
8	70.6	66.9			0	12.2		0		1.5		0		1.5		0		1.5
9	73.0	67.7			0	13.7		0		1.9		0		1.9		0		1.9
10	76.1	68.1			0	15.5		0		4.4		0		4.4		0		4.4
11	79.5	69.1			0	18.3		0		6.6		0		6.6		0		6.6
12	82.9	70.1			0	21.7		0		9.6		0		9.6		0		9.6
13	86.0	71.0			0	24.2		0		12.3		0		12.3		0		12.3
14	88.4	72.5			0	26.9		0		15.5		0		15.5		0		15.5
15	90.0	74.0			0	29.1		0		18.9		0		18.9		0		18.9
16	90.5	73.7			0	30.5		0		20.0		0		20.0		0		20.0
17	90.3	74.2			0	30.5		0		21.6		0		21.6		0		21.6
18	89.4	73.9			0	30.5		0		22.1		0		22.1		0		22.1
19	88.1	74.5			0	30.5		0		22.1		0		22.1		0		22.1
20	86.4	75.3			0	29.8		0		21.6		0		21.6		0		21.6
21	84.3	76.5			0	28.6		0		21.4		0		21.4		0		21.4
22	81.9	75.7			0	25.9		0		21.0		0		21.0		0		21.0
23	79.5	74.0			0	23.9		0		19.1		0		19.1		0		19.1
24	77.0	72.1			0	22.1		0		15.9		0		15.9		0		15.9

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

July			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	73.7	70.5	0	21.2	0	8.9	0	10.3	0	10.3	0	10.3
2	72.4	69.4	0	17.3	0	8.0	0	8.5	0	8.5	0	8.5
3	71.3	68.4	0	15.9	0	5.7	0	5.9	0	5.9	0	5.9
4	70.5	67.7	0	14.1	0	4.3	0	4.4	0	4.4	0	4.4
5	70.0	67.4	0	13.2	0	3.0	0	3.0	0	3.0	0	3.0
6	69.9	67.5	0	12.5	0	1.9	0	1.9	0	1.9	0	1.9
7	70.3	68.0	0	12.5	0	1.1	0	1.1	0	1.1	0	1.1
8	71.7	69.0	0	12.8	0	0.9	0	0.9	0	0.9	0	0.9
9	73.7	69.5	0	13.9	0	2.2	0	2.2	0	2.2	0	2.2
10	76.2	70.6	0	15.9	0	4.2	0	4.2	0	4.2	0	4.2
11	78.9	71.8	0	17.6	0	7.3	0	7.3	0	7.3	0	7.3
12	81.4	73.0	0	21.3	0	10.6	0	10.6	0	10.6	0	10.6
13	83.4	74.4	0	24.0	0	13.6	0	13.6	0	13.6	0	13.6
14	84.8	74.8	0	26.6	0	16.4	0	16.4	0	16.4	0	16.4
15	85.2	75.0	0	28.8	0	18.0	0	18.0	0	18.0	0	18.0
16	85.1	75.0	0	30.4	0	20.1	0	20.1	0	20.1	0	20.1
17	84.6	74.7	0	30.5	0	20.2	0	20.2	0	20.2	0	20.2
18	83.8	74.6	0	30.5	0	20.6	0	20.6	0	20.6	0	20.6
19	82.7	74.6	0	30.5	0	21.1	0	21.1	0	21.1	0	21.1
20	81.4	74.4	0	30.4	0	20.4	0	20.4	0	20.4	0	20.4
21	79.9	74.9	0	27.3	0	19.6	0	19.6	0	19.6	0	19.6
22	78.4	74.0	0	25.5	0	17.5	0	17.5	0	17.5	0	17.5
23	76.8	72.7	0	23.2	0	15.1	0	15.1	0	15.1	0	15.1
24	75.2	71.6	0	21.5	0	12.8	0	12.8	0	12.8	0	12.8

August			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	75.0	72.0	0	21.0	0	10.6	0	12.5	0	12.5	0	12.5
2	73.2	70.3	0	16.7	0	9.2	0	9.8	0	9.8	0	9.8
3	71.7	68.9	0	15.2	0	7.5	0	7.7	0	7.7	0	7.7
4	70.4	67.8	0	13.5	0	5.8	0	5.8	0	5.8	0	5.8
5	69.5	66.8	0	12.2	0	3.5	0	3.5	0	3.5	0	3.5
6	68.9	66.4	0	11.6	0	2.3	0	2.3	0	2.3	0	2.3
7	68.7	66.4	0	10.9	0	1.0	0	1.0	0	1.0	0	1.0
8	69.2	66.8	0	11.3	0	0.3	0	0.3	0	0.3	0	0.3
9	70.8	67.7	0	12.8	0	0.3	0	0.3	0	0.3	0	0.3
10	73.2	67.7	0	14.6	0	1.6	0	1.6	0	1.6	0	1.6
11	76.2	68.8	0	17.0	0	4.3	0	4.4	0	4.4	0	4.4
12	79.3	70.3	0	20.2	0	7.5	0	7.5	0	7.5	0	7.5
13	82.3	72.2	0	23.7	0	10.7	0	10.7	0	10.7	0	10.7
14	84.7	73.7	0	27.0	0	14.3	0	14.3	0	14.3	0	14.3
15	86.3	74.6	0	29.7	0	17.0	0	17.0	0	17.0	0	17.0
16	86.8	75.1	0	30.5	0	19.6	0	19.6	0	19.6	0	19.6
17	86.6	75.1	0	30.5	0	21.2	0	21.2	0	21.2	0	21.2
18	86.0	75.3	0	30.5	0	22.5	0	22.5	0	22.5	0	22.5
19	85.1	76.0	0	30.5	0	22.5	0	22.5	0	22.5	0	22.5
20	83.8	76.8	0	30.5	0	22.1	0	22.1	0	22.1	0	22.1
21	82.3	77.2	0	30.5	0	21.9	0	21.9	0	21.9	0	21.9
22	80.6	76.3	0	25.8	0	21.0	0	21.0	0	21.0	0	21.0
23	78.7	75.3	0	23.2	0	18.1	0	18.1	0	18.1	0	18.1
24	76.8	73.7	0	21.5	0	15.2	0	15.2	0	15.2	0	15.2

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

September			----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	69.6	67.4		0	14.4		0		3.8		0		4.9		0		4.9		0		4.9	
2	67.6	65.0		0	10.6		0		2.3		0		2.7		0		2.7		0		2.7	
3	65.8	63.4		0	8.6		0		0.0		0		0.0		0		0.0		0		0.0	
4	64.3	62.2		0	6.6		0		0.0		0		0.0		0		0.0		0		0.0	
5	63.1	61.1		0	5.1		0		0.0		0		0.0		0		0.0		0		0.0	
6	62.4	60.3		0	4.4		0		0.0		0		0.0		0		0.0		0		0.0	
7	62.2	60.2		0	3.7		0		0.0		0		0.0		0		0.0		0		0.0	
8	62.9	60.9		0	3.9		0		0.0		0		0.0		0		0.0		0		0.0	
9	64.7	61.8		0	5.0		0		0.0		0		0.0		0		0.0		0		0.0	
10	67.6	62.1		0	6.6		0		0.0		0		0.0		0		0.0		0		0.0	
11	71.1	63.1		0	9.2		0		0.0		0		0.0		0		0.0		0		0.0	
12	74.8	64.6		0	12.2		0		0.3		0		0.4		0		0.4		0		0.4	
13	78.3	66.7		0	15.7		0		1.3		0		1.3		0		1.3		0		1.3	
14	81.2	68.4		0	18.6		0		2.1		0		2.1		0		2.1		0		2.1	
15	83.0	70.0		0	21.4		0		2.7		0		2.7		0		2.7		0		2.7	
16	83.7	70.5		0	23.4		0		3.0		0		3.0		0		3.0		0		3.0	
17	83.4	70.5		0	23.8		0		9.0		0		9.0		0		9.0		0		9.0	
18	82.8	70.9		0	23.7		0		14.1		0		14.1		0		14.1		0		14.1	
19	81.6	72.7		0	23.3		0		14.5		0		14.5		0		14.5		0		14.5	
20	80.1	74.7		0	22.6		0		14.6		0		14.6		0		14.6		0		14.6	
21	78.3	74.1		0	21.1		0		14.4		0		14.4		0		14.4		0		14.4	
22	76.3	72.4		0	18.2		0		12.2		0		12.2		0		12.2		0		12.2	
23	74.1	70.7		0	15.6		0		9.9		0		9.9		0		9.9		0		9.9	
24	71.8	68.9		0	13.2		0		7.3		0		7.3		0		7.3		0		7.3	

October			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----						
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton			
1	52.2	50.5		0		0.0		0		0.0	-108,467		0.0		-111,678		0.0		-111,751		0.0
2	50.1	48.6		0		0.0		-8,169		0.0	-128,354		0.0		-130,929		0.0		-130,988		0.0
3	48.4	46.9		0		0.0		-47,543		0.0	-143,878		0.0		-145,945		0.0		-145,991		0.0
4	47.1	45.8		0		0.0		-78,235		0.0	-155,510		0.0		-157,167		0.0		-157,205		0.0
5	46.3	44.8		0		0.0		-94,781		0.6	-162,894		0.0		-164,222		0.0		-164,253		0.0
6	46.0	44.5		0		0.0		-116,373		0.0	-166,027		0.0		-167,093		0.0		-167,117		0.0
7	46.8	45.3		0		0.0		-120,429		0.0	-158,068		0.0		-158,922		0.0		-158,941		0.0
8	48.9	47.5		0		0.0		-107,212		0.0	-137,386		0.0		-138,071		0.0		-138,087		0.0
9	52.2	49.9		0		0.0		-81,752		0.0	-105,937		0.0		-106,486		0.0		-106,498		0.0
10	56.2	52.5		0		0.0		-50,251		0.0	-69,625		0.0		-70,064		0.0		-70,074		0.0
11	60.4	54.4		0		0.0		-17,486		0.0	-32,991		0.0		-33,343		0.0		-33,351		0.0
12	64.4	56.0		0		0.0		0		0.0	0		0.0		0		0.0		0		0.0
13	67.7	57.3		0		0.0		0		0.0	0		0.0		0		0.0		0		0.0
14	69.8	58.2		0		0.0		0		0.0	0		0.0		0		0.0		0		0.0
15	70.6	58.1		0		0.0		0		0.0	0		0.0		0		0.0		0		0.0
16	70.3	57.5		0		2.0		0		0.0	0		0.0		0		0.0		0		0.0
17	69.5	57.3		0		1.4		0		0.0	0		0.0		0		0.0		0		0.0
18	68.2	57.7		0		0.5		0		0.0	0		0.0		0		0.0		0		0.0
19	66.5	60.6		0		0.0		0		0.0	0		0.0		0		0.0		0		0.0
20	64.4	60.8		0		0.0		0		0.0	0		0.0		0		0.0		0		0.0
21	62.1	59.4		0		0.0		-6,198		0.0	-13,954		0.0		-14,129		0.0		-14,134		0.0
22	59.6	57.3		0		0.0		-33,689		0.0	-39,908		0.0		-40,050		0.0		-40,053		0.0
23	57.0	55.1		0		0.0		-61,149		0.0	-66,138		0.0		-66,251		0.0		-66,254		0.0
24	54.5	52.7		0		0.0		-86,365		0.0	-90,367		0.0		-90,457		0.0		-90,460		0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

November			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0	49.2	-69,347	0.0	-37,663	0.0	-132,586	0.0	-133,878	0.0	-133,895	0.0
2	49.4	47.3	-79,801	0.0	-79,437	0.0	-155,570	0.0	-156,605	0.0	-156,619	0.0
3	47.2	45.3	-89,952	0.0	-113,085	0.0	-174,138	0.0	-174,969	0.0	-174,981	0.0
4	45.3	43.4	-98,414	0.0	-140,918	0.0	-189,875	0.0	-190,541	0.0	-190,550	0.0
5	43.9	42.2	-102,685	0.0	-161,373	0.0	-200,630	0.0	-201,163	0.0	-201,171	0.0
6	43.0	41.4	-98,254	0.0	-175,346	0.0	-206,826	0.0	-207,254	0.0	-207,260	0.0
7	42.7	41.2	-87,948	0.0	-182,351	0.0	-207,593	0.0	-207,937	0.0	-207,941	0.0
8	43.5	42.0	-66,699	0.0	-177,828	0.0	-198,067	0.0	-198,342	0.0	-198,346	0.0
9	45.9	44.0	-34,641	0.0	-156,655	0.0	-172,881	0.0	-173,102	0.0	-173,105	0.0
10	49.4	46.6	0	0.0	-125,204	0.0	-138,209	0.0	-138,387	0.0	-138,389	0.0
11	53.8	48.6	0	0.0	-85,938	0.0	-96,356	0.0	-96,498	0.0	-96,500	0.0
12	58.4	50.6	0	0.0	-46,046	0.0	-54,386	0.0	-54,500	0.0	-54,501	0.0
13	62.8	52.6	0	0.0	-8,737	0.0	-15,338	0.0	-15,429	0.0	-15,430	0.0
14	66.3	54.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	68.7	55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5	56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2	55.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3	57.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19	66.9	59.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20	65.0	59.4	0	0.0	0	0.0	-5,904	0.0	-5,957	0.0	-5,957	0.0
21	62.8	58.2	0	0.0	-26,806	0.0	-29,931	0.0	-29,974	0.0	-29,974	0.0
22	60.2	56.1	0	0.0	-54,162	0.0	-56,668	0.0	-56,702	0.0	-56,702	0.0
23	57.5	54.0	0	0.0	-80,901	0.0	-82,909	0.0	-82,937	0.0	-82,937	0.0
24	54.7	51.7	0	0.0	-107,779	0.0	-109,389	0.0	-109,411	0.0	-109,411	0.0

December			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9	42.5	-135,939	0.0	-194,686	0.0	-207,047	0.0	-207,107	0.0	-207,107	0.0
2	43.2	41.1	-142,241	0.0	-211,475	0.0	-221,380	0.0	-221,428	0.0	-221,428	0.0
3	41.8	39.8	-148,567	0.0	-225,097	0.0	-233,034	0.0	-233,072	0.0	-233,073	0.0
4	40.7	38.7	-154,198	0.0	-235,697	0.0	-242,058	0.0	-242,088	0.0	-242,089	0.0
5	40.1	38.4	-157,722	0.0	-241,284	0.0	-246,382	0.0	-246,407	0.0	-246,407	0.0
6	39.9	38.4	-153,335	0.0	-243,502	0.0	-247,588	0.0	-247,608	0.0	-247,608	0.0
7	40.5	39.0	-144,903	0.0	-238,101	0.0	-241,376	0.0	-241,391	0.0	-241,392	0.0
8	42.2	40.7	-129,061	0.0	-222,142	0.0	-224,766	0.0	-224,779	0.0	-224,779	0.0
9	44.9	43.4	-105,743	0.0	-196,960	0.0	-199,063	0.0	-199,073	0.0	-199,073	0.0
10	48.2	45.8	-79,377	0.0	-167,601	0.0	-169,286	0.0	-169,293	0.0	-169,293	0.0
11	51.7	48.3	-47,698	0.0	-137,733	0.0	-139,082	0.0	-139,088	0.0	-139,088	0.0
12	55.0	50.7	-19,141	0.0	-110,738	0.0	-111,818	0.0	-111,823	0.0	-111,823	0.0
13	57.7	52.0	0	0.0	-89,804	0.0	-90,668	0.0	-90,672	0.0	-90,672	0.0
14	59.5	52.6	0	0.0	-77,233	0.0	-77,925	0.0	-77,928	0.0	-77,928	0.0
15	60.1	52.7	0	0.0	-75,705	0.0	-76,258	0.0	-76,260	0.0	-76,260	0.0
16	59.9	52.6	0	0.0	-79,821	0.0	-80,263	0.0	-80,265	0.0	-80,265	0.0
17	59.2	52.1	0	0.0	-86,525	0.0	-86,880	0.0	-86,881	0.0	-86,881	0.0
18	58.2	51.8	0	0.0	-94,356	0.0	-94,640	0.0	-94,641	0.0	-94,641	0.0
19	56.8	52.2	-19,096	0.0	-105,270	0.0	-105,497	0.0	-105,498	0.0	-105,498	0.0
20	55.0	51.4	-41,147	0.0	-119,871	0.0	-120,053	0.0	-120,054	0.0	-120,054	0.0
21	53.1	50.1	-59,892	0.0	-135,486	0.0	-135,632	0.0	-135,633	0.0	-135,633	0.0
22	51.0	48.1	-76,548	0.0	-153,771	0.0	-153,887	0.0	-153,888	0.0	-153,888	0.0
23	48.9	46.2	-90,396	0.0	-172,241	0.0	-172,334	0.0	-172,335	0.0	-172,335	0.0
24	46.9	44.1	-101,009	0.0	-189,549	0.0	-189,623	0.0	-189,624	0.0	-189,624	0.0

01 Card - Job Information

Project: STANSELL HALL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 29818 (1 BLDG)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	OA HIGH	ACTUAL	ACTUAL	MED-RCR	YES

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	STANSELL HALL

-----CARD 20-- General Room Parameters-----

Room	Zone					Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Room	Floor	Floor	Const	Plenum	Ceiling	Floor	Floors	Rooms per
	Number	Descrip	Length	Width	Type	Height	Resistance	Height	Multiplier	Zone
1	1	BLOCK	286.5	61.5	3	0		11.6	2	

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Equal to	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				199			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Reflectance Multiplier
1	1	286.5	12		196	0			
1	2	61.5	12		196	90			
1	3	286.5	12		196	180			
1	4	61.5	12		196	270			

-----CARD 26-- Schedules -----

Room	People	Lights	Ventilation	Infiltration	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	Value	Value	Value	Value	Minimum	Fans	Fan	Fan	Exhaust	Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room	People	People	People	People	Lighting	Lighting	Lighting	Percent	--- Daylighting ---
Number	Value	Units	Sensible	Latent	Value	Units	Type	Ballast Factor	Reference Point 1
1	100	PEOPLE	255	325	2.3	WATT-SF	SUSFLUOR		Reference Point 2

-----CARD 28-- Miscellaneous Equipment -----

Room	Misc	Equipment	Equipment	Energy	Energy	Energy	Percent	Percent	Percent
Number	Number	Descrip	Value	Consump	Consump	Schedule	Meter	of Load	Misc. Load
1	1	MISS.	20	KW	FGHEAT			Sensible	Misc. Sens


```

-----CARD 29--- Room Airflows -----
-----Ventilation-----
Room  Cooling      Heating      Infiltration
Number Value      Units      Value      Units      Value      Units
1      15          CFM-P      15          CFM-P      .08          CFM-SF

```

```

-----CARD 30- Fan Airflows -----
-----Main-----
Room  Cooling      Heating      Cooling      Heating      --Room Exhaust--
Number Value      Units      Value      Units      Value      Units
1      1          CFM-SF      1          CFM-SF

```

```

----- System Section Alternative #1 -----

```

```

-----CARD 39-- System Alternative -----
Number      Description
1           MULTI ZONE SYSTEM

```

```

-----CARD 40--- System Type -----
-----OPTIONAL VENTILATION SYSTEM-----
System      Ventil      Fan
Set      System      Deck      Cooling      Heating      Cooling      Heating      Static
Number      Type      Location      SADBvh      SADBvh      Schedule      Schedule      Pressure
1           MZ

```

```

-----CARD 41-- Zone Assignment -----
System
Set      Ref #1      Ref #2      Ref #3      Ref #4      Ref #5      Ref #6
Number      Begin      End      Begin      End      Begin      End      Begin      End
1           1          1

```

```

-----CARD 42--- Fan SP and Duct Parameters-----
System      Cool      Heat      Return      Mn Exh      Aux      Rm Exh      Cool      Return      Supply      Supply      Return
Set      Fan      Fan      Fan      Fan      Fan      Fan      Fan Mtr      Fan Mtr      Duct      Duct      Air
Number      SP      SP      SP      SP      SP      SP      Loc      Loc      Ht Gn      Loc      Path
1

```

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE

FGHEAT SCHD FOR HEAT LOAD CALCS

HTGCONST SAMPLE HEATING TSTAT SCHEDULE

YES AVAILABLE (100%)

System:

MZ MULTIZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

Trane Air Conditioning Economics
By: Trane Customer Direct Service Network

V 600
PAGE 1

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*****  
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**          T R A C E    6 0 0    A N A L Y S I S          **  
**  
**          by          **  
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SOLDIER SERVICE CENTER
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 33720 (1 BUILDING)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 16:44:50 8/16/94
Dataset Name: FGTYP530 .TM

System 1 Peak SZ - SINGLE ZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==)					Mo/Hr: 8/15		*	Mo/Hr: 6/15		*	Mo/Hr: 13/ 1				*
Outside Air ==)					OADB/WB/HR: 97/ 76/105.0		*	OADB: 100		*	OADB: 23				*
															*
	Space	Ret. Air	Ret. Air	Net	Perct	*	Space	Perct	*	Space Peak	Coil Peak	Perct			
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot			
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)			
Envelope Loads						*			*						
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00			
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00			
Roof Cond	274,087	0		274,087	21.26	*	298,822	40.73	*	-150,414	-150,414	9.30			
Glass Solar	148,239	0		148,239	11.50	*	133,035	18.13	*	0	0	0.00			
Glass Cond	76,343	0		76,343	5.92	*	89,263	12.17	*	-192,619	-192,619	11.90			
Wall Cond	92,957	0		92,957	7.21	*	101,700	13.86	*	-207,081	-207,081	12.80			
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00			
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00			
Infiltration	134,498			134,498	10.43	*	110,911	15.12	*	-245,620	-245,620	15.18			
Sub Total==)	726,124	0		726,124	56.33	*	733,731	100.00	*	-795,735	-795,735	49.18			
Internal Loads						*			*						
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00			
People	0			0	0.00	*	0	0.00	*	0	0	0.00			
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00			
Sub Total==)	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00			
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00			
Outside Air	0	0	0	562,818	43.67	*	0	0.00	*	0	-822,254	50.82			
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00			
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00			
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00			
OV/UNDR Sizing	0			0	0.00	*	0	0.00	*	0	0	0.00			
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00			
Terminal Bypass		0	0	0	0.00	*		0.00	*		0	0.00			
															*
Grand Total==)	726,124	0	0	1,288,942	100.00	*	733,731	100.00	*	-795,735	-1,617,989	100.00			

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	108,600
Main Clg	107.4	1,288.9	1,080.6	108,600	78.3	69.0	92.6	68.9	65.7	90.6	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	36,200
Totals	107.4	1,288.9									Wall	49,198
												3,801
												8

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)---		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	15.2	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	16,470	16,470	Clg Cfm/Sqft	1.00	SADB	68.9	74.6
Main Htg	-1,618.0	108,600	61.2	74.6	Infil	3,936	4,920	Clg Cfm/Ton	1011.06	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	108,600	108,600	Clg Sqft/Ton	1011.06	Return	75.0	68.0
Preheat	-931.9	108,600	61.2	68.9	Mincfm	0	0	Clg Btuh/Sqft	11.87	Ret/OA	78.3	61.2
Reheat	0.0	0	0.0	0.0	Return	108,600	108,600	No. People	1,098	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	16,470	16,470	Htg % OA	15.2	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.00	Fn BldTD	0.0	0.0
Total	-1,618.0				Auxil	0	0	Htg Btuh/SqFt	-14.90	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-1,179,261	0.0	-1,026,574	0.0	-1,038,641	0.0	-1,038,641	0.0	-1,038,641	0.0
2	32.9	30.7	-1,133,886	0.0	-1,047,416	0.0	-1,057,228	0.0	-1,057,228	0.0	-1,057,228	0.0
3	33.1	31.3	-1,100,223	0.0	-1,054,405	0.0	-1,062,388	0.0	-1,062,388	0.0	-1,062,388	0.0
4	33.9	32.1	-1,072,922	0.0	-1,048,857	0.0	-1,055,351	0.0	-1,055,351	0.0	-1,055,351	0.0
5	35.2	33.5	-1,049,987	0.0	-1,032,295	0.0	-1,037,580	0.0	-1,037,580	0.0	-1,037,580	0.0
6	37.0	35.4	-1,019,285	0.0	-1,005,181	0.0	-1,009,479	0.0	-1,009,479	0.0	-1,009,479	0.0
7	39.0	37.6	-981,698	0.0	-972,245	0.0	-975,742	0.0	-975,742	0.0	-975,742	0.0
8	41.3	40.1	-931,713	0.0	-932,031	0.0	-934,875	0.0	-934,875	0.0	-934,875	0.0
9	43.7	42.5	-862,352	0.0	-885,739	0.0	-888,054	0.0	-888,054	0.0	-888,054	0.0
10	46.1	44.0	-776,076	0.0	-833,957	0.0	-835,838	0.0	-835,838	0.0	-835,838	0.0
11	48.4	45.0	-673,783	0.0	-779,140	0.0	-780,670	0.0	-780,670	0.0	-780,670	0.0
12	50.5	45.6	-508,609	0.0	-723,598	0.0	-724,840	0.0	-724,840	0.0	-724,840	0.0
13	52.2	46.1	-157,144	0.0	-577,425	0.0	-584,334	0.0	-584,334	0.0	-584,334	0.0
14	53.5	46.4	-64,800	0.0	-479,919	0.0	-479,919	0.0	-479,919	0.0	-479,919	0.0
15	54.3	46.3	-21,468	0.0	-447,593	0.0	-447,593	0.0	-447,593	0.0	-447,593	0.0
16	54.6	46.1	-40,918	0.0	-443,578	0.0	-443,578	0.0	-443,578	0.0	-443,578	0.0
17	54.0	45.9	-112,303	0.0	-483,296	0.0	-483,296	0.0	-483,296	0.0	-483,296	0.0
18	52.5	45.0	-260,513	0.0	-543,624	0.0	-543,624	0.0	-543,624	0.0	-543,624	0.0
19	50.1	44.8	-400,589	0.0	-631,091	0.0	-631,091	0.0	-631,091	0.0	-631,091	0.0
20	47.1	43.3	-509,045	0.0	-717,694	0.0	-717,694	0.0	-717,694	0.0	-717,694	0.0
21	43.7	40.4	-595,916	0.0	-809,803	0.0	-809,803	0.0	-809,803	0.0	-809,803	0.0
22	40.4	37.3	-679,653	0.0	-892,512	0.0	-892,512	0.0	-892,512	0.0	-892,512	0.0
23	37.3	34.9	-740,440	0.0	-952,511	0.0	-952,511	0.0	-952,511	0.0	-952,511	0.0
24	34.9	32.6	-787,604	0.0	-1,002,225	0.0	-1,002,225	0.0	-1,002,225	0.0	-1,002,225	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-804,242	0.0	-868,975	0.0	-869,255	0.0	-869,255	0.0	-869,255	0.0
2	39.7	37.1	-822,565	0.0	-909,739	0.0	-909,965	0.0	-909,965	0.0	-909,965	0.0
3	37.8	35.1	-840,058	0.0	-950,937	0.0	-951,122	0.0	-951,122	0.0	-951,122	0.0
4	36.3	33.8	-855,868	0.0	-985,544	0.0	-985,694	0.0	-985,694	0.0	-985,694	0.0
5	35.1	32.6	-865,382	0.0	-1,015,615	0.0	-1,015,737	0.0	-1,015,737	0.0	-1,015,737	0.0
6	34.4	32.0	-864,256	0.0	-1,037,635	0.0	-1,037,733	0.0	-1,037,733	0.0	-1,037,733	0.0
7	34.1	31.9	-851,658	0.0	-1,051,654	0.0	-1,051,735	0.0	-1,051,735	0.0	-1,051,735	0.0
8	34.6	32.4	-821,690	0.0	-1,049,556	0.0	-1,049,623	0.0	-1,049,623	0.0	-1,049,623	0.0
9	36.0	33.8	-771,148	0.0	-1,026,617	0.0	-1,026,671	0.0	-1,026,671	0.0	-1,026,671	0.0
10	38.2	34.7	-699,724	0.0	-983,175	0.0	-983,218	0.0	-983,218	0.0	-983,218	0.0
11	40.9	36.2	-454,275	0.0	-925,868	0.0	-925,904	0.0	-925,904	0.0	-925,904	0.0
12	43.9	37.4	-250,243	0.0	-858,965	0.0	-858,995	0.0	-858,995	0.0	-858,995	0.0
13	46.9	39.4	-132,119	0.0	-786,958	0.0	-786,982	0.0	-786,982	0.0	-786,982	0.0
14	49.7	41.4	-58,348	0.0	-592,048	0.0	-592,175	0.0	-592,175	0.0	-592,175	0.0
15	51.8	42.8	-11,913	0.0	-508,188	0.0	-508,188	0.0	-508,188	0.0	-508,188	0.0
16	53.2	43.9	-26,491	0.0	-482,134	0.0	-482,134	0.0	-482,134	0.0	-482,134	0.0
17	53.7	44.2	-90,388	0.0	-480,167	0.0	-480,167	0.0	-480,167	0.0	-480,167	0.0
18	53.4	44.4	-212,186	0.0	-509,919	0.0	-509,919	0.0	-509,919	0.0	-509,919	0.0
19	52.7	44.4	-360,888	0.0	-571,040	0.0	-571,040	0.0	-571,040	0.0	-571,040	0.0
20	51.5	45.2	-479,008	0.0	-612,161	0.0	-612,161	0.0	-612,161	0.0	-612,161	0.0
21	50.0	44.6	-573,303	0.0	-658,301	0.0	-658,301	0.0	-658,301	0.0	-658,301	0.0
22	48.1	43.3	-645,611	0.0	-719,074	0.0	-719,074	0.0	-719,074	0.0	-719,074	0.0
23	46.1	41.8	-705,380	0.0	-769,403	0.0	-769,403	0.0	-769,403	0.0	-769,403	0.0
24	43.9	40.1	-759,523	0.0	-827,402	0.0	-827,402	0.0	-827,402	0.0	-827,402	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

March		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	51.3	46.8	-425,200	0.0		-101,121	0.0			-566,864	0.0			-566,864	0.0			-566,864	0.0		
2	48.7	44.6	-473,000	0.0		-641,017	0.0			-641,017	0.0			-641,017	0.0			-641,017	0.0		
3	46.6	42.9	-505,965	0.0		-698,553	0.0			-698,553	0.0			-698,553	0.0			-698,553	0.0		
4	44.9	41.4	-540,841	0.0		-749,254	0.0			-749,254	0.0			-749,254	0.0			-749,254	0.0		
5	43.9	40.8	-555,567	0.0		-774,878	0.0			-774,878	0.0			-774,878	0.0			-774,878	0.0		
6	43.5	40.8	-554,911	0.0		-800,675	0.0			-800,675	0.0			-800,675	0.0			-800,675	0.0		
7	44.0	41.4	-528,639	0.0		-789,426	0.0			-789,426	0.0			-789,426	0.0			-789,426	0.0		
8	45.4	42.7	-435,629	0.0		-735,161	0.0			-735,161	0.0			-735,161	0.0			-735,161	0.0		
9	47.7	44.3	-281,946	0.0		-650,768	0.0			-650,768	0.0			-650,768	0.0			-650,768	0.0		
10	50.6	45.8	-104,582	0.0		-531,984	0.0			-531,984	0.0			-531,984	0.0			-531,984	0.0		
11	53.9	47.4	0	0.0		-409,644	0.0			-409,644	0.0			-409,644	0.0			-409,644	0.0		
12	57.4	49.0	0	0.0		-285,109	0.0			-285,109	0.0			-285,109	0.0			-285,109	0.0		
13	60.7	50.8	0	0.0		-179,731	0.0			-179,731	0.0			-179,731	0.0			-179,731	0.0		
14	63.6	52.7	0	0.0		-80,022	0.0			-80,022	0.0			-80,022	0.0			-80,022	0.0		
15	65.9	53.7	0	0.0		-24,110	0.0			-24,110	0.0			-24,110	0.0			-24,110	0.0		
16	67.3	54.4	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
17	67.8	54.6	0	19.9		0	0.0			0	0.0			0	0.0			0	0.0		
18	67.4	54.8	0	15.0		-14,583	0.0			-14,583	0.0			-14,583	0.0			-14,583	0.0		
19	66.4	55.2	0	0.0		-108,957	0.0			-108,957	0.0			-108,957	0.0			-108,957	0.0		
20	64.7	56.0	0	0.0		-179,904	0.0			-179,904	0.0			-179,904	0.0			-179,904	0.0		
21	62.5	56.0	0	0.0		-247,659	0.0			-247,659	0.0			-247,659	0.0			-247,659	0.0		
22	60.0	54.1	0	0.0		-321,861	0.0			-321,861	0.0			-321,861	0.0			-321,861	0.0		
23	57.1	51.9	0	0.0		-401,397	0.0			-401,397	0.0			-401,397	0.0			-401,397	0.0		
24	54.2	49.4	0	0.0		-488,321	0.0			-488,321	0.0			-488,321	0.0			-488,321	0.0		

April		----- Design -----				----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton			Htg Btuh	Clg Ton		
1	61.0	56.5	-85,126	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
2	58.9	54.9	-134,455	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
3	57.0	53.5	-167,111	0.0		0	0.0			-88,705	0.0			-88,705	0.0			-88,705	0.0		
4	55.4	52.4	-196,981	0.0		0	0.0			-414,609	0.0			-414,609	0.0			-414,609	0.0		
5	54.2	51.4	-213,871	0.0		-271,971	0.0			-452,358	0.0			-452,358	0.0			-452,358	0.0		
6	53.5	50.9	-213,042	0.0		-469,753	0.0			-469,753	0.0			-469,753	0.0			-469,753	0.0		
7	53.2	51.1	-167,937	0.0		-475,363	0.0			-475,363	0.0			-475,363	0.0			-475,363	0.0		
8	53.9	51.5	-60,484	0.0		-433,044	0.0			-433,044	0.0			-433,044	0.0			-433,044	0.0		
9	55.9	52.1	0	0.0		-348,540	0.0			-348,540	0.0			-348,540	0.0			-348,540	0.0		
10	58.9	53.2	0	0.0		-217,016	0.0			-217,016	0.0			-217,016	0.0			-217,016	0.0		
11	62.6	55.2	0	0.0		-91,200	0.0			-91,200	0.0			-91,200	0.0			-91,200	0.0		
12	66.5	57.3	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
13	70.2	59.6	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
14	73.2	61.0	0	45.4		0	0.0			0	0.0			0	0.0			0	0.0		
15	75.2	62.2	0	57.1		0	0.0			0	0.0			0	0.0			0	0.0		
16	75.9	62.2	0	55.9		0	0.0			0	0.0			0	0.0			0	0.0		
17	75.6	62.0	0	50.4		0	0.0			0	0.0			0	0.0			0	0.0		
18	74.9	61.7	0	39.9		0	0.0			0	0.0			0	0.0			0	0.0		
19	73.7	62.0	0	27.1		0	0.0			0	0.0			0	0.0			0	0.0		
20	72.1	62.4	0	14.6		0	0.0			0	0.0			0	0.0			0	0.0		
21	70.2	63.3	0	5.7		0	0.0			0	0.0			0	0.0			0	0.0		
22	68.0	62.5	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
23	65.7	60.5	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		
24	63.4	58.5	0	0.0		0	0.0			0	0.0			0	0.0			0	0.0		

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

May	----- Design -----						----- Weekday -----				----- Saturday-----				----- Sunday -----				----- Monday -----			
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	68.2	63.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
2	65.7	61.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
3	63.6	59.7		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
4	61.8	58.4		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
5	60.5	57.1		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
6	59.7	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
7	59.4	56.5		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
8	60.1	56.3		0		0.0		0		0.0		-37,563		0.0		-37,563		0.0		-37,563		0.0
9	62.4	56.3		0		0.0		-131,090		0.0		-131,090		0.0		-131,090		0.0		-131,090		0.0
10	65.7	57.2		0		0.0		0		0.0		0		0.0		0		0.0		0		0.0
11	69.9	58.9		0		50.3		0		0.0		0		0.0		0		0.0		0		0.0
12	74.3	60.9		0		62.6		0		0.0		0		0.0		0		0.0		0		0.0
13	78.5	63.7		0		72.0		0		0.0		0		0.0		0		0.0		0		0.0
14	81.9	65.3		0		78.7		0		0.0		0		0.0		0		0.0		0		0.0
15	84.1	66.9		0		82.2		0		0.0		0		0.0		0		0.0		0		0.0
16	84.9	67.1		0		80.0		0		38.3		0		38.3		0		38.3		0		38.3
17	84.6	67.3		0		74.4		0		42.8		0		42.8		0		42.8		0		42.8
18	83.8	67.1		0		64.4		0		38.6		0		38.6		0		38.6		0		38.6
19	82.4	67.5		0		52.1		0		31.5		0		31.5		0		31.5		0		31.5
20	80.6	68.9		0		38.5		0		23.4		0		23.4		0		23.4		0		23.4
21	78.5	71.0		0		28.6		0		18.5		0		18.5		0		18.5		0		18.5
22	76.1	69.9		0		20.4		0		12.3		0		12.3		0		12.3		0		12.3
23	73.4	68.0		0		14.4		0		3.1		0		3.1		0		3.1		0		3.1
24	70.8	65.5		0		9.3		0		0.0		0		0.0		0		0.0		0		0.0

June	----- Design -----				----- Weekday -----			----- Saturday-----		----- Sunday -----			----- Monday -----					
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	74.7	70.1		0		29.8		0		10.6		0		14.9		0		14.9
2	72.6	68.4		0		29.1		0		3.9		0		4.6		0		4.6
3	70.9	67.3		0		24.6		0		0.0		0		0.0		0		0.0
4	69.6	66.5		0		22.3		0		0.0		0		0.0		0		0.0
5	68.7	65.8		0		20.2		0		0.0		0		0.0		0		0.0
6	68.5	65.7		0		20.4		0		0.0		0		0.0		0		0.0
7	69.0	66.3		0		27.4		0		0.0		0		0.0		0		0.0
8	70.6	66.9		0		39.4		0		0.0		0		0.0		0		0.0
9	73.0	67.7		0		52.2		0		0.0		0		0.0		0		0.0
10	76.1	68.1		0		65.6		0		8.5		0		8.6		0		8.6
11	79.5	69.1		0		78.3		0		38.5		0		38.7		0		38.7
12	82.9	70.1		0		89.3		0		48.2		0		48.2		0		48.2
13	86.0	71.0		0		97.9		0		56.5		0		56.5		0		56.5
14	88.4	72.5		0		103.9		0		68.3		0		68.3		0		68.3
15	90.0	74.0		0		107.1		0		76.9		0		76.9		0		76.9
16	90.5	73.7		0		105.3		0		76.7		0		76.7		0		76.7
17	90.3	74.2		0		100.3		0		75.9		0		75.9		0		75.9
18	89.4	73.9		0		89.4		0		72.5		0		72.5		0		72.5
19	88.1	74.5		0		76.8		0		65.5		0		65.5		0		65.5
20	86.4	75.3		0		63.4		0		57.6		0		57.6		0		57.6
21	84.3	76.5		0		54.0		0		53.9		0		53.9		0		53.9
22	81.9	75.7		0		48.3		0		48.8		0		48.8		0		48.8
23	79.5	74.0		0		42.4		0		38.4		0		38.4		0		38.4
24	77.0	72.1		0		38.2		0		26.9		0		26.9		0		26.9

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

July	----- Design -----					----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	73.7	70.5		0	44.5		0	6.2		0	8.3		0	8.3		0	8.3
2	72.4	69.4		0	35.0		0	1.4		0	1.6		0	1.6		0	1.6
3	71.3	68.4		0	29.8		0	0.0		0	0.0		0	0.0		0	0.0
4	70.5	67.7		0	27.1		0	0.0		0	0.0		0	0.0		0	0.0
5	70.0	67.4		0	25.7		0	0.0		0	0.0		0	0.0		0	0.0
6	69.9	67.5		0	24.8		0	0.0		0	0.0		0	0.0		0	0.0
7	70.3	68.0		0	31.3		0	0.0		0	0.0		0	0.0		0	0.0
8	71.7	69.0		0	42.0		0	0.0		0	0.0		0	0.0		0	0.0
9	73.7	69.5		0	53.8		0	0.0		0	0.0		0	0.0		0	0.0
10	76.2	70.6		0	65.6		0	15.5		0	15.6		0	15.6		0	15.6
11	78.9	71.8		0	75.6		0	48.9		0	48.9		0	48.9		0	48.9
12	81.4	73.0		0	88.4		0	58.0		0	58.0		0	58.0		0	58.0
13	83.4	74.4		0	97.7		0	66.7		0	66.7		0	66.7		0	66.7
14	84.8	74.8		0	103.0		0	71.0		0	71.0		0	71.0		0	71.0
15	85.2	75.0		0	105.1		0	74.3		0	74.3		0	74.3		0	74.3
16	85.1	75.0		0	103.3		0	72.4		0	72.4		0	72.4		0	72.4
17	84.6	74.7		0	99.2		0	67.9		0	67.9		0	67.9		0	67.9
18	83.8	74.6		0	88.3		0	63.0		0	63.0		0	63.0		0	63.0
19	82.7	74.6		0	76.5		0	57.9		0	57.9		0	57.9		0	57.9
20	81.4	74.4		0	64.7		0	49.6		0	49.6		0	49.6		0	49.6
21	79.9	74.9		0	55.6		0	43.0		0	43.0		0	43.0		0	43.0
22	78.4	74.0		0	49.4		0	34.1		0	34.1		0	34.1		0	34.1
23	76.8	72.7		0	44.9		0	25.0		0	25.0		0	25.0		0	25.0
24	75.2	71.6		0	41.3		0	16.9		0	16.9		0	16.9		0	16.9

August	----- Design -----				----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----				
Hour	OADB	OAWB	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton	Htg	Btuh	Clg	Ton
1	75.0	72.0		0	43.9		0	11.9		16.2		0	16.2		0	16.2		16.2
2	73.2	70.3		0	33.5		0	4.8		5.6		0	5.6		0	5.6		5.6
3	71.7	68.9		0	27.8		0	0.0		0.0		0	0.0		0	0.0		0.0
4	70.4	67.8		0	24.9		0	0.0		0.0		0	0.0		0	0.0		0.0
5	69.5	66.8		0	21.3		0	0.0		0.0		0	0.0		0	0.0		0.0
6	68.9	66.4		0	21.8		0	0.0		0.0		0	0.0		0	0.0		0.0
7	68.7	66.4		0	25.4		0	0.0		0.0		0	0.0		0	0.0		0.0
8	69.2	66.8		0	35.8		0	0.0		0.0		0	0.0		0	0.0		0.0
9	70.8	67.7		0	49.9		0	0.0		0.0		0	0.0		0	0.0		0.0
10	73.2	67.7		0	63.8		0	0.0		0.0		0	0.0		0	0.0		0.0
11	76.2	68.8		0	75.6		0	14.5		14.6		0	14.6		0	14.6		14.6
12	79.3	70.3		0	86.3		0	43.4		43.5		0	43.5		0	43.5		43.5
13	82.3	72.2		0	97.9		0	54.8		54.8		0	54.8		0	54.8		54.8
14	84.7	73.7		0	106.3		0	64.7		64.7		0	64.7		0	64.7		64.7
15	86.3	74.6		0	107.4		0	74.0		74.0		0	74.0		0	74.0		74.0
16	86.8	75.1		0	107.4		0	75.2		75.2		0	75.2		0	75.2		75.2
17	86.6	75.1		0	100.9		0	73.0		73.0		0	73.0		0	73.0		73.0
18	86.0	75.3		0	87.4		0	72.2		72.2		0	72.2		0	72.2		72.2
19	85.1	76.0		0	75.3		0	64.1		64.1		0	64.1		0	64.1		64.1
20	83.8	76.8		0	63.7		0	58.0		58.0		0	58.0		0	58.0		58.0
21	82.3	77.2		0	57.1		0	53.7		53.7		0	53.7		0	53.7		53.7
22	80.6	76.3		0	49.8		0	48.7		48.7		0	48.7		0	48.7		48.7
23	78.7	75.3		0	43.8		0	37.3		37.3		0	37.3		0	37.3		37.3
24	76.8	73.7		0	38.6		0	27.0		27.0		0	27.0		0	27.0		27.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	17.1	0	0.0	0	0.0	0	0.0	0	0.0
2	67.6	65.0	0	8.5	0	0.0	0	0.0	0	0.0	0	0.0
3	65.8	63.4	0	4.6	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	0.7	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	10.0	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	22.2	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	35.7	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	49.2	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	60.4	0	0.0	0	0.0	0	0.0	0	0.0
13	78.3	66.7	0	70.8	0	0.0	0	0.0	0	0.0	0	0.0
14	81.2	68.4	0	78.6	0	0.0	0	0.0	0	0.0	0	0.0
15	83.0	70.0	0	82.0	0	8.8	0	8.2	0	8.2	0	8.2
16	83.7	70.5	0	80.1	0	47.3	0	47.4	0	47.4	0	47.4
17	83.4	70.5	0	72.6	0	45.1	0	45.1	0	45.1	0	45.1
18	82.8	70.9	0	61.6	0	40.7	0	40.7	0	40.7	0	40.7
19	81.6	72.7	0	49.5	0	35.2	0	35.2	0	35.2	0	35.2
20	80.1	74.7	0	40.1	0	33.6	0	33.6	0	33.6	0	33.6
21	78.3	74.1	0	33.8	0	28.5	0	28.5	0	28.5	0	28.5
22	76.3	72.4	0	25.6	0	19.4	0	19.4	0	19.4	0	19.4
23	74.1	70.7	0	19.2	0	7.4	0	7.4	0	7.4	0	7.4
24	71.8	68.9	0	13.9	0	0.0	0	0.0	0	0.0	0	0.0

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	0	0.0	-505,293	0.0	-505,293	0.0	-505,293	0.0
2	50.1	48.6	0	0.0	-290,658	0.0	-565,335	0.0	-565,335	0.0	-565,335	0.0
3	48.4	46.9	0	0.0	-605,222	0.0	-605,222	0.0	-605,222	0.0	-605,222	0.0
4	47.1	45.8	0	0.0	-651,312	0.0	-651,312	0.0	-651,312	0.0	-651,312	0.0
5	46.3	44.8	-356,409	0.0	-686,203	0.0	-686,203	0.0	-686,203	0.0	-686,203	0.0
6	46.0	44.5	-464,494	0.0	-714,916	0.0	-714,916	0.0	-714,916	0.0	-714,916	0.0
7	46.8	45.3	-444,154	0.0	-694,521	0.0	-694,521	0.0	-694,521	0.0	-694,521	0.0
8	48.9	47.5	-344,777	0.0	-631,433	0.0	-631,433	0.0	-631,433	0.0	-631,433	0.0
9	52.2	49.9	-199,110	0.0	-512,203	0.0	-512,203	0.0	-512,203	0.0	-512,203	0.0
10	56.2	52.5	-23,743	0.0	-378,693	0.0	-378,693	0.0	-378,693	0.0	-378,693	0.0
11	60.4	54.4	0	0.0	-229,840	0.0	-229,840	0.0	-229,840	0.0	-229,840	0.0
12	64.4	56.0	0	0.0	-84,016	0.0	-84,016	0.0	-84,016	0.0	-84,016	0.0
13	67.7	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	28.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	29.5	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	15.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	3.8	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	0.0	-175,370	0.0	-175,370	0.0	-175,370	0.0	-175,370	0.0
22	59.6	57.3	0	0.0	-302,737	0.0	-302,737	0.0	-302,737	0.0	-302,737	0.0
23	57.0	55.1	0	0.0	-367,690	0.0	-367,690	0.0	-367,690	0.0	-367,690	0.0
24	54.5	52.7	0	0.0	-437,600	0.0	-437,600	0.0	-437,600	0.0	-437,600	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
SINGLE ZONE SYSTEM

November		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.0 49.2	-443,946	0.0	-206,403	0.0	-529,266	0.0	-529,266	0.0	-529,266	0.0
2	49.4 47.3	-495,206	0.0	-603,495	0.0	-603,495	0.0	-603,495	0.0	-603,495	0.0
3	47.2 45.3	-537,428	0.0	-664,395	0.0	-664,395	0.0	-664,395	0.0	-664,395	0.0
4	45.3 43.4	-566,582	0.0	-720,045	0.0	-720,045	0.0	-720,045	0.0	-720,045	0.0
5	43.9 42.2	-588,408	0.0	-753,710	0.0	-753,710	0.0	-753,710	0.0	-753,710	0.0
6	43.0 41.4	-579,841	0.0	-788,599	0.0	-788,599	0.0	-788,599	0.0	-788,599	0.0
7	42.7 41.2	-559,413	0.0	-807,394	0.0	-807,394	0.0	-807,394	0.0	-807,394	0.0
8	43.5 42.0	-478,906	0.0	-789,703	0.0	-789,703	0.0	-789,703	0.0	-789,703	0.0
9	45.9 44.0	-337,014	0.0	-703,922	0.0	-703,922	0.0	-703,922	0.0	-703,922	0.0
10	49.4 46.6	-156,667	0.0	-576,615	0.0	-576,615	0.0	-576,615	0.0	-576,615	0.0
11	53.8 48.6	0	0.0	-437,962	0.0	-437,962	0.0	-437,962	0.0	-437,962	0.0
12	58.4 50.6	0	0.0	-296,839	0.0	-296,839	0.0	-296,839	0.0	-296,839	0.0
13	62.8 52.6	0	0.0	-170,108	0.0	-170,108	0.0	-170,108	0.0	-170,108	0.0
14	66.3 54.5	0	0.0	-65,595	0.0	-65,595	0.0	-65,595	0.0	-65,595	0.0
15	68.7 55.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16	69.5 56.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17	69.2 55.8	0	9.6	0	0.0	0	0.0	0	0.0	0	0.0
18	68.3 57.0	0	8.2	-36,511	0.0	-36,511	0.0	-36,511	0.0	-36,511	0.0
19	66.9 59.4	0	0.0	-126,710	0.0	-126,710	0.0	-126,710	0.0	-126,710	0.0
20	65.0 59.4	0	0.0	-184,807	0.0	-184,807	0.0	-184,807	0.0	-184,807	0.0
21	62.8 58.2	0	0.0	-243,137	0.0	-243,137	0.0	-243,137	0.0	-243,137	0.0
22	60.2 56.1	0	0.0	-319,753	0.0	-319,753	0.0	-319,753	0.0	-319,753	0.0
23	57.5 54.0	0	0.0	-380,298	0.0	-380,298	0.0	-380,298	0.0	-380,298	0.0
24	54.7 51.7	0	0.0	-457,982	0.0	-457,982	0.0	-457,982	0.0	-457,982	0.0

December		----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	44.9 42.5	-602,103	0.0	-767,528	0.0	-767,528	0.0	-767,528	0.0	-767,528	0.0
2	43.2 41.1	-642,871	0.0	-819,823	0.0	-819,823	0.0	-819,823	0.0	-819,823	0.0
3	41.8 39.8	-672,775	0.0	-852,439	0.0	-852,439	0.0	-852,439	0.0	-852,439	0.0
4	40.7 38.7	-702,337	0.0	-885,960	0.0	-885,960	0.0	-885,960	0.0	-885,960	0.0
5	40.1 38.4	-715,628	0.0	-897,689	0.0	-897,689	0.0	-897,689	0.0	-897,689	0.0
6	39.9 38.4	-714,600	0.0	-903,250	0.0	-903,250	0.0	-903,250	0.0	-903,250	0.0
7	40.5 39.0	-692,758	0.0	-895,444	0.0	-895,444	0.0	-895,444	0.0	-895,444	0.0
8	42.2 40.7	-642,533	0.0	-867,227	0.0	-867,227	0.0	-867,227	0.0	-867,227	0.0
9	44.9 43.4	-533,520	0.0	-816,868	0.0	-816,868	0.0	-816,868	0.0	-816,868	0.0
10	48.2 45.8	-381,256	0.0	-718,688	0.0	-718,688	0.0	-718,688	0.0	-718,688	0.0
11	51.7 48.3	-224,404	0.0	-554,414	0.0	-554,414	0.0	-554,414	0.0	-554,414	0.0
12	55.0 50.7	-75,688	0.0	-432,138	0.0	-432,138	0.0	-432,138	0.0	-432,138	0.0
13	57.7 52.0	0	0.0	-334,685	0.0	-334,685	0.0	-334,685	0.0	-334,685	0.0
14	59.5 52.6	0	0.0	-274,125	0.0	-274,125	0.0	-274,125	0.0	-274,125	0.0
15	60.1 52.7	0	0.0	-251,733	0.0	-251,733	0.0	-251,733	0.0	-251,733	0.0
16	59.9 52.6	0	0.0	-257,499	0.0	-257,499	0.0	-257,499	0.0	-257,499	0.0
17	59.2 52.1	0	0.0	-304,314	0.0	-304,314	0.0	-304,314	0.0	-304,314	0.0
18	58.2 51.8	0	0.0	-363,093	0.0	-363,093	0.0	-363,093	0.0	-363,093	0.0
19	56.8 52.2	0	0.0	-419,386	0.0	-419,386	0.0	-419,386	0.0	-419,386	0.0
20	55.0 51.4	-166,269	0.0	-474,360	0.0	-474,360	0.0	-474,360	0.0	-474,360	0.0
21	53.1 50.1	-381,789	0.0	-527,073	0.0	-527,073	0.0	-527,073	0.0	-527,073	0.0
22	51.0 48.1	-459,679	0.0	-591,420	0.0	-591,420	0.0	-591,420	0.0	-591,420	0.0
23	48.9 46.2	-513,901	0.0	-647,033	0.0	-647,033	0.0	-647,033	0.0	-647,033	0.0
24	46.9 44.1	-565,353	0.0	-704,287	0.0	-704,287	0.0	-704,287	0.0	-704,287	0.0

01 Card - Job Information

 Project: SOLDIER SERVICE CENTER
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 33720 (1 BUILDING)

-----CARD 08-- Climatic Information -----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	CENTER_OFFICES

-----CARD 20-- General Room Parameters -----

Room	Zone	Room	Floor	Floor	Const	Plenum	Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Descrip	Length	Width	Type	Height	Ceiling	Floor	Floors	Rooms per	Depth
	Number						Resistance	Height	Multiplier	Zone	
1	1	BLOCK	3620	10	3	0		14	3		

-----CARD 21-- Thermostat Parameters -----

Room	Cooling Room	Room Design	Cooling T'stat	Cooling T'stat	Heating Room	Heating T'stat	Heating T'stat	T'stat Location	Mass / No. Hrs	Carpet On
Number	Design DB	RH	Driftpoint	Schedule	Design DB	Driftpoint	Schedule	Flag	Average	Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room	Roof	Roof	Roof	Roof	Roof	Const	Roof	Roof	Roof
Number	Number	Equal to Floor?	Length	Width	U-Value	Type	Direction	Tilt	Alpha
1	1	YES				182			

-----CARD 24-- Wall Parameters -----

Room	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Wall	Ground
Number	Number	Length	Height	U-Value	Type	Direction	Tilt	Alpha	Reflectance Multiplier
1	1	248.75	14.5	3	0				
1	2	53.75	14.5	3	90				
1	3	74.5	14.5	3	45				
1	4	53.75	14.5	3	0				
1	5	134.75	14.5	3	90				
1	6	90.75	14.5	3	180				
1	7	97.75	14.5	3	270				
1	8	74.5	14.5	3	225				
1	9	211.75	14.5	3	180				
1	10	90.75	14.5	3	270				

-----CARD 25-- Wall/Glass Parameters -----

Room	Wall	Glass	Glass	Pct Glass	Glass	Shading	External	Internal	Percent	Visible	Inside
Number	Number	Length	Width	or No. of	U-Value	Coefficient	Shading Type	Shading Type	Solar to Ret. Air	Transmittance	Visible Reflectance
1	1	2.5	2.5	56	1.03	.7					
1	2	2.5	2.5	4	1.03	.7					
1	3	2.5	2.5	16	1.03	.7					
1	5	2.5	2.5	36	1.03	.7					
1	6	2.5	2.5	12	1.03	.7					
1	7	2.5	2.5	16	1.03	.7					
1	8	4	4	12	1.03	.7					
1	9	2.5	2.5	32	1.03	.7					

-----CARD 26-- Schedules -----

Room	People	Lights	Ventilation	Infiltration	Reheat	Cooling	Heating	Auxiliary	Room	Daylighting
Number	FGHEAT	FGHEAT	YES	YES	Minimum	Fans	Fan	Fan	Exhaust	Controls
1	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	Percent Daylighting Reference Point 1	Percent Daylighting Reference Point 2
1	366	PEOPLE	255	325	1.8	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISS.	200	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

Room Number	-----Ventilation-----				-----Infiltration-----				--Reheat Minimum--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
1	Value 15	Units CFM-P	Value 15	Units CFM-P	Value .08	Units CFM-SF	Value .1	Units CFM-SF		

-----CARD 30- Fan Airflows -----

Room Number	-----Main-----				-----Auxiliary-----				--Room Exhaust--	
	-----Cooling-----		-----Heating-----		-----Cooling-----		-----Heating-----		Value	Units
1	Value 1	Units CFM-SF	Value 1	Units CFM-SF						

----- System Section Alternative #1 -----

-----CARD 39-- System Alternative -----

Number	Description
1	SINGLE ZONE SYSTEM

-----CARD 40--- System Type -----

System Set Number	System Type	-----OPTIONAL VENTILATION SYSTEM-----					
		Ventil Deck Location	Cooling SADBvh	Heating SADBvh	Cooling Schedule	Heating Schedule	Fan Static Pressure
1	SZ						

System

[illegible][illegible]

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

SZ SINGLE ZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHED FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	72
24	

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	

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**                                     **  
**          T R A C E    6 0 0    A N A L Y S I S          **  
**                                     **  
**          by              **  
**                                     **  
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CHILD CARE HOSPITAL
FORT GORDON, GEORGIA
U. S. ARMY CORP OF ENGINEERS
BON
BUILDING 33800 (1 BLDG)

Weather File Code: AUGUSTA
Location: FORT GORDON, GEORGIA
Latitude: 33.0 (deg)
Longitude: 82.0 (deg)
Time Zone: 5
Elevation: 143 (ft)
Barometric Pressure: 29.8 (in. Hg)

Summer Clearness Number: 0.90
Winter Clearness Number: 0.90
Summer Design Dry Bulb: 95 (F)
Summer Design Wet Bulb: 76 (F)
Winter Design Dry Bulb: 23 (F)
Summer Ground Relectance: 0.20
Winter Ground Relectance: 0.20

Air Density: 0.0756 (Lbm/cuft)
Air Specific Heat: 0.2444 (Btu/lbm/F)
Density-Specific Heat Prod: 1.1094 (Btu-min./hr/cuft/F)
Latent Heat Factor: 4,883.6 (Btu-min./hr/cuft)
Enthalpy Factor: 4.5387 (Lb-min./hr/cuft)

Design Simulation Period: April To October
System Simulation Period: January To December
Cooling Load Methodology: CLTD/CLF (Transfer Function Method)

Time/Date Program was Run: 15:16:30 8/16/94
Dataset Name: FGTYP529 .TM

System 1 Block MZ - MULTIZONE

***** COOLING COIL PEAK ***** CLG SPACE PEAK ***** HEATING COIL PEAK *****

Peaked at Time ==>					Mo/Hr: 8/16	*	Mo/Hr: 6/18		*	Mo/Hr: 13/ 1		
Outside Air ==>					OADB/WB/HR: 96/ 76/105.0	*	OADB: 96		*	OADB: 23		
						*			*			
	Space	Ret. Air	Ret. Air	Net	Perct	*	Space	Perct	*	Space Peak	Coil Peak	Perct
	Sens.+Lat.	Sensible	Latent	Total	Of Tot	*	Sensible	Of Tot	*	Space Sens	Tot Sens	Of Tot
	(Btuh)	(Btuh)	(Btuh)	(Btuh)	(%)	*	(Btuh)	(%)	*	(Btuh)	(Btuh)	(%)
Envelope Loads						*			*			
Skylite Solr	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Skylite Cond	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Roof Cond	42,411	0		42,411	7.67	*	42,253	10.10	*	-23,827	-23,827	3.89
Glass Solar	89,681	0		89,681	16.23	*	98,446	23.52	*	0	0	0.00
Glass Cond	38,578	0		38,578	6.98	*	40,754	9.74	*	-97,336	-97,336	15.89
Wall Cond	143,195	0		143,195	25.91	*	166,231	39.72	*	-236,211	-236,211	38.56
Partition	0			0	0.00	*	0	0.00	*	0	0	0.00
Exposed Floor	0			0	0.00	*	0	0.00	*	0	0	0.00
Infiltration	61,489			61,489	11.13	*	31,730	7.58	*	-85,807	-85,807	14.01
Sub Total==>	375,354	0		375,354	67.92	*	379,413	90.66	*	-443,181	-443,181	72.34
Internal Loads						*			*			
Lights	0	0		0	0.00	*	0	0.00	*	0	0	0.00
People	0			0	0.00	*	0	0.00	*	0	0	0.00
Misc	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Sub Total==>	0	0	0	0	0.00	*	0	0.00	*	0	0	0.00
Ceiling Load	0	0		0	0.00	*	0	0.00	*	0	0	0.00
Outside Air	0	0	0	138,182	25.01	*	0	0.00	*	0	-154,266	25.18
Sup. Fan Heat				0	0.00	*		0.00	*		0	0.00
Ret. Fan Heat		0		0	0.00	*		0.00	*		0	0.00
Duct Heat Pkup		0		0	0.00	*		0.00	*		0	0.00
OV/UNDR Sizing	39,078			39,078	7.07	*	39,078	9.34	*	-15,148	-15,148	2.47
Exhaust Heat		0	0	0	0.00	*		0.00	*		0	0.00
Terminal Bypass		0	0	0	-0.00	*		0.00	*		0	0.00
						*			*			
Grand Total==>	414,432	0	0	552,614	100.00	*	418,492	100.00	*	-458,329	-612,595	100.00

-----COOLING COIL SELECTION-----										-----AREAS-----		
	Total Capacity	Sens Cap.	Coil Airfl	Entering DB/WB/HR			Leaving DB/WB/HR			Gross Total	Glass (sf)	(%)
	(Tons)	(Mbh)	(Mbh)	(cfm)	Deg F	Deg F	Grains	Deg F	Deg F	Grains	Floor	29,125
Main Clg	46.1	552.6	457.5	32,125	77.0	65.7	77.4	63.3	60.4	74.7	Part	0
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	ExFlr	0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Roof	14,425
Totals	46.1	552.6									Wall	17,188
												1,921
												11

-----HEATING COIL SELECTION-----					-----AIRFLOWS (cfm)-----			--ENGINEERING CHECKS--		--TEMPERATURES (F)--		
	Capacity	Coil Airfl	Ent	Lvg	Type	Cooling	Heating	Clg % OA	9.6	Type	Clg	Htg
	(Mbh)	(cfm)	Deg F	Deg F	Vent	3,090	3,090	Clg Cfm/Sqft	1.10	SADB	63.3	80.9
Main Htg	-590.0	32,125	64.3	80.9	Infil	1,375	1,719	Clg Cfm/Ton	697.59	Plenum	75.0	68.0
Aux Htg	0.0	0	0.0	0.0	Supply	32,125	32,125	Clg Sqft/Ton	632.45	Return	75.0	68.0
Preheat	-0.0	32,125	63.7	63.3	Mincfm	0	0	Clg Btuh/Sqft	18.97	Ret/OA	77.0	63.7
Reheat	0.0	0	0.0	0.0	Return	32,125	32,125	No. People	206	Runarnd	75.0	68.0
Humidif	0.0	0	0.0	0.0	Exhaust	3,090	3,090	Htg % OA	9.6	Fn MtrTD	0.0	0.0
Opt Vent	0.0	0	0.0	0.0	Rm Exh	0	0	Htg Cfm/SqFt	1.10	Fn BldTD	0.0	0.0
Total	-590.0				Auxil	0	0	Htg Btuh/SqFt	-20.26	Fn Frict	0.0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

January			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	33.4	31.1	-302,611	0.0	-369,250	0.0	-363,361	0.0	-363,344	0.0	-363,344	0.0
2	32.9	30.7	-298,970	0.0	-369,268	0.0	-364,728	0.0	-364,715	0.0	-364,715	0.0
3	33.1	31.3	-297,926	0.0	-362,808	0.0	-359,300	0.0	-359,290	0.0	-359,290	0.0
4	33.9	32.1	-296,968	0.0	-350,997	0.0	-348,282	0.0	-348,274	0.0	-348,274	0.0
5	35.2	33.5	-295,568	0.0	-335,527	0.0	-333,421	0.0	-333,415	0.0	-333,415	0.0
6	37.0	35.4	-286,736	0.0	-316,603	0.0	-314,967	0.0	-314,962	0.0	-314,962	0.0
7	39.0	37.6	-272,538	0.0	-297,628	0.0	-296,357	0.0	-296,352	0.0	-296,352	0.0
8	41.3	40.1	-250,465	0.0	-276,535	0.0	-275,544	0.0	-275,541	0.0	-275,541	0.0
9	43.7	42.5	-217,511	0.0	-254,571	0.0	-253,798	0.0	-253,796	0.0	-253,796	0.0
10	46.1	44.0	-177,014	0.0	-232,008	0.0	-231,404	0.0	-231,402	0.0	-231,402	0.0
11	48.4	45.0	-130,093	0.0	-209,705	0.0	-209,234	0.0	-209,232	0.0	-209,232	0.0
12	50.5	45.6	-84,877	0.0	-188,486	0.0	-188,118	0.0	-188,116	0.0	-188,116	0.0
13	52.2	46.1	-50,620	0.0	-170,728	0.0	-170,440	0.0	-170,438	0.0	-170,438	0.0
14	53.5	46.4	-26,124	0.0	-156,071	0.0	-155,846	0.0	-155,845	0.0	-155,845	0.0
15	54.3	46.3	-13,490	0.0	-145,922	0.0	-145,745	0.0	-145,744	0.0	-145,744	0.0
16	54.6	46.1	-14,038	0.0	-140,186	0.0	-140,047	0.0	-140,046	0.0	-140,046	0.0
17	54.0	45.9	-24,319	0.0	-144,790	0.0	-144,681	0.0	-144,681	0.0	-144,681	0.0
18	52.5	45.0	-47,186	0.0	-160,586	0.0	-160,500	0.0	-160,500	0.0	-160,500	0.0
19	50.1	44.8	-77,483	0.0	-187,548	0.0	-187,481	0.0	-187,481	0.0	-187,481	0.0
20	47.1	43.3	-109,281	0.0	-221,286	0.0	-221,233	0.0	-221,233	0.0	-221,233	0.0
21	43.7	40.4	-136,898	0.0	-258,987	0.0	-258,945	0.0	-258,945	0.0	-258,945	0.0
22	40.4	37.3	-163,178	0.0	-294,810	0.0	-294,777	0.0	-294,777	0.0	-294,777	0.0
23	37.3	34.9	-184,003	0.0	-327,405	0.0	-327,378	0.0	-327,378	0.0	-327,378	0.0
24	34.9	32.6	-200,599	0.0	-350,610	0.0	-350,589	0.0	-350,589	0.0	-350,589	0.0

February			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	41.7	38.6	-197,603	0.0	-252,498	0.0	-283,513	0.0	-283,606	0.0	-283,606	0.0
2	39.7	37.1	-213,443	0.0	-281,591	0.0	-305,698	0.0	-305,772	0.0	-305,773	0.0
3	37.8	35.1	-227,191	0.0	-307,574	0.0	-326,341	0.0	-326,399	0.0	-326,400	0.0
4	36.3	33.8	-238,872	0.0	-327,209	0.0	-341,841	0.0	-341,888	0.0	-341,888	0.0
5	35.1	32.6	-245,729	0.0	-342,967	0.0	-354,391	0.0	-354,428	0.0	-354,428	0.0
6	34.4	32.0	-245,579	0.0	-352,289	0.0	-361,218	0.0	-361,247	0.0	-361,247	0.0
7	34.1	31.9	-238,453	0.0	-356,726	0.0	-363,714	0.0	-363,737	0.0	-363,737	0.0
8	34.6	32.4	-221,845	0.0	-351,556	0.0	-357,032	0.0	-357,050	0.0	-357,050	0.0
9	36.0	33.8	-195,324	0.0	-335,191	0.0	-339,485	0.0	-339,500	0.0	-339,500	0.0
10	38.2	34.7	-159,885	0.0	-309,160	0.0	-312,529	0.0	-312,541	0.0	-312,541	0.0
11	40.9	36.2	-118,647	0.0	-277,779	0.0	-280,422	0.0	-280,431	0.0	-280,431	0.0
12	43.9	37.4	-78,707	0.0	-243,522	0.0	-245,595	0.0	-245,602	0.0	-245,602	0.0
13	46.9	39.4	-46,752	0.0	-209,378	0.0	-211,004	0.0	-211,010	0.0	-211,010	0.0
14	49.7	41.4	-25,097	0.0	-177,053	0.0	-178,330	0.0	-178,335	0.0	-178,335	0.0
15	51.8	42.8	-12,551	0.0	-153,153	0.0	-154,156	0.0	-154,159	0.0	-154,159	0.0
16	53.2	43.9	-12,552	0.0	-137,876	0.0	-138,664	0.0	-138,667	0.0	-138,667	0.0
17	53.7	44.2	-19,679	0.0	-133,454	0.0	-134,073	0.0	-134,075	0.0	-134,075	0.0
18	53.4	44.4	-38,260	0.0	-137,869	0.0	-138,355	0.0	-138,357	0.0	-138,357	0.0
19	52.7	44.4	-62,831	0.0	-147,180	0.0	-147,564	0.0	-147,565	0.0	-147,565	0.0
20	51.5	45.2	-92,128	0.0	-163,252	0.0	-163,555	0.0	-163,556	0.0	-163,556	0.0
21	50.0	44.6	-115,416	0.3	-183,051	0.0	-183,290	0.0	-183,291	0.0	-183,291	0.0
22	48.1	43.3	-142,033	0.0	-207,398	0.0	-207,587	0.0	-207,588	0.0	-207,588	0.0
23	46.1	41.8	-164,261	0.0	-231,945	0.0	-232,094	0.0	-232,095	0.0	-232,095	0.0
24	43.9	40.1	-179,684	0.0	-258,194	0.0	-258,312	0.0	-258,313	0.0	-258,313	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

March			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	51.3	46.8	-86,671	0.0	-40,576	0.0	-149,696	0.0	-150,615	0.0	-150,624	0.0
2	48.7	44.6	-97,661	0.0	-92,917	0.8	-180,239	0.0	-180,958	0.0	-180,965	0.0
3	46.6	42.9	-106,986	0.0	-127,229	2.2	-203,506	0.0	-204,069	0.0	-204,075	0.0
4	44.9	41.4	-116,770	0.0	-163,676	1.8	-221,613	0.0	-222,054	0.0	-222,059	0.0
5	43.9	40.8	-120,609	0.0	-202,388	0.0	-231,244	0.0	-231,591	0.0	-231,594	0.0
6	43.5	40.8	-117,004	0.0	-211,975	0.0	-234,536	0.0	-234,808	0.0	-234,811	0.0
7	44.0	41.4	-105,569	0.0	-210,219	0.0	-227,881	0.0	-228,095	0.0	-228,097	0.0
8	45.4	42.7	-81,612	0.0	-197,537	0.0	-211,381	0.0	-211,550	0.0	-211,552	0.0
9	47.7	44.3	-45,240	0.0	-173,349	0.0	-184,208	0.0	-184,341	0.0	-184,342	0.0
10	50.6	45.8	0	0.0	-141,308	0.0	-149,828	0.0	-149,932	0.0	-149,934	0.0
11	53.9	47.4	0	0.0	-103,722	0.0	-110,409	0.0	-110,491	0.0	-110,492	0.0
12	57.4	49.0	0	0.0	-63,226	0.0	-68,475	0.0	-68,540	0.0	-68,541	0.0
13	60.7	50.8	0	0.0	-25,845	0.0	-29,966	0.0	-30,018	0.0	-30,018	0.0
14	63.6	52.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15	65.9	53.7	0	1.7	0	0.0	0	0.0	0	0.0	0	0.0
16	67.3	54.4	0	2.4	0	0.0	0	0.0	0	0.0	0	0.0
17	67.8	54.6	0	5.6	0	0.0	0	0.0	0	0.0	0	0.0
18	67.4	54.8	0	4.7	0	0.0	0	0.0	0	0.0	0	0.0
19	66.4	55.2	0	4.4	0	0.0	0	0.0	0	0.0	0	0.0
20	64.7	56.0	0	4.5	0	0.0	0	0.0	0	0.0	0	0.0
21	62.5	56.0	0	1.2	0	0.0	0	0.0	0	0.0	0	0.0
22	60.0	54.1	0	0.0	-35,556	0.0	-37,493	0.0	-37,513	0.0	-37,513	0.0
23	57.1	51.9	0	0.0	-75,465	0.0	-76,973	0.0	-76,988	0.0	-76,989	0.0
24	54.2	49.4	0	0.0	-113,330	0.0	-114,507	0.0	-114,519	0.0	-114,519	0.0

April			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	61.0	56.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2	58.9	54.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3	57.0	53.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4	55.4	52.4	0	0.0	0	0.0	-21,218	0.0	-22,385	0.0	-22,451	0.0
5	54.2	51.4	0	0.0	-33,560	0.0	-50,137	0.0	-51,050	0.0	-51,101	0.0
6	53.5	50.9	0	0.0	-56,983	0.0	-69,951	0.0	-70,666	0.0	-70,706	0.0
7	53.2	51.1	0	0.0	-72,322	0.0	-82,465	0.0	-83,026	0.0	-83,058	0.0
8	53.9	51.5	0	0.0	-72,112	0.0	-80,049	0.0	-80,490	0.0	-80,514	0.0
9	55.9	52.1	0	0.0	-53,777	0.0	-60,001	0.0	-60,348	0.0	-60,367	0.0
10	58.9	53.2	0	0.0	-21,844	0.0	-26,727	0.0	-26,999	0.0	-27,015	0.0
11	62.6	55.2	0	1.3	0	0.0	0	0.0	0	0.0	0	0.0
12	66.5	57.3	0	2.1	0	0.0	0	0.0	0	0.0	0	0.0
13	70.2	59.6	0	4.2	0	0.0	0	0.0	0	0.0	0	0.0
14	73.2	61.0	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
15	75.2	62.2	0	14.5	0	0.0	0	0.0	0	0.0	0	0.0
16	75.9	62.2	0	21.9	0	1.2	0	1.3	0	1.3	0	1.3
17	75.6	62.0	0	22.2	0	1.2	0	1.3	0	1.3	0	1.3
18	74.9	61.7	0	21.2	0	1.3	0	1.2	0	1.2	0	1.2
19	73.7	62.0	0	17.8	0	2.4	0	2.3	0	2.2	0	2.2
20	72.1	62.4	0	14.4	0	1.2	0	1.2	0	1.2	0	1.2
21	70.2	63.3	0	10.9	0	0.5	0	0.4	0	0.4	0	0.4
22	68.0	62.5	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
23	65.7	60.5	0	5.3	0	0.0	0	0.0	0	0.0	0	0.0
24	63.4	58.5	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

May			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	68.2	63.5	0	0.0	0	2.1	0	2.6	0	2.6	0	2.6
2	65.7	61.5	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
3	63.6	59.7	0	5.4	0	0.0	0	0.0	0	0.0	0	0.0
4	61.8	58.4	0	3.5	0	0.0	0	0.0	0	0.0	0	0.0
5	60.5	57.1	0	2.6	0	0.0	0	0.0	0	0.0	0	0.0
6	59.7	56.5	0	1.6	0	0.0	0	0.0	0	0.0	0	0.0
7	59.4	56.5	0	2.8	0	0.0	0	0.0	0	0.0	0	0.0
8	60.1	56.3	0	5.2	0	0.0	0	0.0	0	0.0	0	0.0
9	62.4	56.3	0	8.6	0	0.0	0	0.0	0	0.0	0	0.0
10	65.7	57.2	0	12.1	0	0.0	0	0.0	0	0.0	0	0.0
11	69.9	58.9	0	16.1	0	0.0	0	0.0	0	0.0	0	0.0
12	74.3	60.9	0	19.9	0	0.3	0	0.3	0	0.3	0	0.3
13	78.5	63.7	0	23.4	0	1.2	0	1.2	0	1.2	0	1.2
14	81.9	65.3	0	26.3	0	4.4	0	4.4	0	4.4	0	4.4
15	84.1	66.9	0	29.0	0	7.4	0	7.4	0	7.4	0	7.4
16	84.9	67.1	0	30.3	0	15.6	0	15.7	0	15.7	0	15.7
17	84.6	67.3	0	30.9	0	16.8	0	16.8	0	16.8	0	16.8
18	83.8	67.1	0	30.2	0	17.2	0	17.2	0	17.2	0	17.2
19	82.4	67.5	0	27.5	0	16.0	0	16.0	0	16.0	0	16.0
20	80.6	68.9	0	23.4	0	14.8	0	14.8	0	14.8	0	14.8
21	78.5	71.0	0	19.9	0	14.2	0	14.2	0	14.2	0	14.2
22	76.1	69.9	0	16.6	0	11.8	0	11.8	0	11.8	0	11.8
23	73.4	68.0	0	14.2	0	8.5	0	8.5	0	8.5	0	8.5
24	70.8	65.5	0	11.5	0	5.5	0	5.5	0	5.5	0	5.5

June			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	74.7	70.1	0	21.8	0	11.2	0	12.9	0	12.9	0	12.9
2	72.6	68.4	0	18.3	0	9.4	0	9.8	0	9.8	0	9.8
3	70.9	67.3	0	16.6	0	7.5	0	7.6	0	7.6	0	7.6
4	69.6	66.5	0	14.6	0	4.7	0	4.8	0	4.8	0	4.8
5	68.7	65.8	0	13.6	0	3.0	0	3.0	0	3.0	0	3.0
6	68.5	65.7	0	12.9	0	1.2	0	1.2	0	1.2	0	1.2
7	69.0	66.3	0	15.0	0	1.8	0	1.8	0	1.8	0	1.8
8	70.6	66.9	0	17.8	0	4.0	0	4.0	0	4.0	0	4.0
9	73.0	67.7	0	21.4	0	6.4	0	6.4	0	6.4	0	6.4
10	76.1	68.1	0	25.4	0	10.5	0	10.5	0	10.5	0	10.5
11	79.5	69.1	0	28.8	0	14.7	0	14.7	0	14.7	0	14.7
12	82.9	70.1	0	32.7	0	17.5	0	17.5	0	17.5	0	17.5
13	86.0	71.0	0	35.6	0	20.8	0	20.8	0	20.8	0	20.8
14	88.4	72.5	0	37.8	0	24.7	0	24.7	0	24.7	0	24.7
15	90.0	74.0	0	40.4	0	29.0	0	29.0	0	29.0	0	29.0
16	90.5	73.7	0	42.0	0	29.0	0	29.0	0	29.0	0	29.0
17	90.3	74.2	0	42.7	0	30.2	0	30.2	0	30.2	0	30.2
18	89.4	73.9	0	41.2	0	30.6	0	30.6	0	30.6	0	30.6
19	88.1	74.5	0	38.6	0	29.4	0	29.4	0	29.4	0	29.4
20	86.4	75.3	0	34.5	0	26.6	0	26.6	0	26.6	0	26.6
21	84.3	76.5	0	31.8	0	25.6	0	25.6	0	25.6	0	25.6
22	81.9	75.7	0	29.1	0	23.3	0	23.3	0	23.3	0	23.3
23	79.5	74.0	0	25.9	0	20.4	0	20.4	0	20.4	0	20.4
24	77.0	72.1	0	23.9	0	16.8	0	16.8	0	16.8	0	16.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

July			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	73.7	70.5		0	22.9		0	9.0		0	10.5		0	10.5		0	10.5
2	72.4	69.4		0	18.8		0	7.9		0	8.3		0	8.3		0	8.3
3	71.3	68.4		0	17.0		0	5.4		0	5.5		0	5.5		0	5.5
4	70.5	67.7		0	15.8		0	3.7		0	3.8		0	3.8		0	3.8
5	70.0	67.4		0	14.8		0	2.2		0	2.2		0	2.2		0	2.2
6	69.9	67.5		0	14.0		0	0.9		0	0.9		0	0.9		0	0.9
7	70.3	68.0		0	15.7		0	1.2		0	1.2		0	1.2		0	1.2
8	71.7	69.0		0	18.8		0	4.0		0	4.0		0	4.0		0	4.0
9	73.7	69.5		0	21.5		0	6.9		0	6.9		0	6.9		0	6.9
10	76.2	70.6		0	25.1		0	11.6		0	11.6		0	11.6		0	11.6
11	78.9	71.8		0	28.0		0	15.9		0	15.9		0	15.9		0	15.9
12	81.4	73.0		0	32.1		0	19.0		0	19.0		0	19.0		0	19.0
13	83.4	74.4		0	35.3		0	22.5		0	22.5		0	22.5		0	22.5
14	84.8	74.8		0	37.6		0	24.5		0	24.5		0	24.5		0	24.5
15	85.2	75.0		0	39.6		0	26.6		0	26.6		0	26.6		0	26.6
16	85.1	75.0		0	40.9		0	27.4		0	27.4		0	27.4		0	27.4
17	84.6	74.7		0	41.6		0	27.4		0	27.4		0	27.4		0	27.4
18	83.8	74.6		0	40.1		0	27.6		0	27.6		0	27.6		0	27.6
19	82.7	74.6		0	37.8		0	26.3		0	26.3		0	26.3		0	26.3
20	81.4	74.4		0	34.2		0	23.8		0	23.8		0	23.8		0	23.8
21	79.9	74.9		0	31.4		0	22.0		0	22.0		0	22.0		0	22.0
22	78.4	74.0		0	28.1		0	19.1		0	19.1		0	19.1		0	19.1
23	76.8	72.7		0	25.7		0	15.9		0	15.9		0	15.9		0	15.9
24	75.2	71.6		0	23.9		0	13.2		0	13.2		0	13.2		0	13.2

August			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton	Htg	Btuh	Clg Ton
1	75.0	72.0		0	22.9		0	11.0		0	12.9		0	12.9		0	12.9
2	73.2	70.3		0	18.2		0	9.4		0	9.9		0	9.9		0	9.9
3	71.7	68.9		0	16.4		0	7.5		0	7.6		0	7.6		0	7.6
4	70.4	67.8		0	14.9		0	4.8		0	4.8		0	4.8		0	4.8
5	69.5	66.8		0	13.3		0	3.0		0	3.0		0	3.0		0	3.0
6	68.9	66.4		0	12.2		0	1.3		0	1.3		0	1.3		0	1.3
7	68.7	66.4		0	13.7		0	0.7		0	0.7		0	0.7		0	0.7
8	69.2	66.8		0	16.1		0	1.0		0	1.0		0	1.0		0	1.0
9	70.8	67.7		0	19.8		0	3.8		0	3.9		0	3.9		0	3.9
10	73.2	67.7		0	24.0		0	8.0		0	8.0		0	8.0		0	8.0
11	76.2	68.8		0	27.4		0	11.5		0	11.5		0	11.5		0	11.5
12	79.3	70.3		0	31.4		0	15.2		0	15.2		0	15.2		0	15.2
13	82.3	72.2		0	35.1		0	19.0		0	19.0		0	19.0		0	19.0
14	84.7	73.7		0	38.6		0	23.0		0	23.0		0	23.0		0	23.0
15	86.3	74.6		0	40.4		0	26.6		0	26.6		0	26.6		0	26.6
16	86.8	75.1		0	42.4		0	28.4		0	28.4		0	28.4		0	28.4
17	86.6	75.1		0	41.5		0	28.8		0	28.8		0	28.8		0	28.8
18	86.0	75.3		0	40.3		0	29.9		0	29.9		0	29.9		0	29.9
19	85.1	76.0		0	37.4		0	28.5		0	28.5		0	28.5		0	28.5
20	83.8	76.8		0	34.0		0	26.2		0	26.2		0	26.2		0	26.2
21	82.3	77.2		0	31.7		0	24.2		0	24.2		0	24.2		0	24.2
22	80.6	76.3		0	28.5		0	22.1		0	22.1		0	22.1		0	22.1
23	78.7	75.3		0	25.2		0	19.0		0	19.0		0	19.0		0	19.0
24	76.8	73.7		0	23.2		0	15.8		0	15.8		0	15.8		0	15.8

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

September			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	69.6	67.4	0	14.8	0	3.1	0	4.1	0	4.1	0	4.1
2	67.6	65.0	0	11.4	0	1.0	0	1.1	0	1.1	0	1.1
3	65.8	63.4	0	8.2	0	0.0	0	0.0	0	0.0	0	0.0
4	64.3	62.2	0	6.5	0	0.0	0	0.0	0	0.0	0	0.0
5	63.1	61.1	0	4.9	0	0.0	0	0.0	0	0.0	0	0.0
6	62.4	60.3	0	4.0	0	0.0	0	0.0	0	0.0	0	0.0
7	62.2	60.2	0	3.9	0	0.0	0	0.0	0	0.0	0	0.0
8	62.9	60.9	0	5.8	0	0.0	0	0.0	0	0.0	0	0.0
9	64.7	61.8	0	9.9	0	0.0	0	0.0	0	0.0	0	0.0
10	67.6	62.1	0	14.2	0	0.0	0	0.0	0	0.0	0	0.0
11	71.1	63.1	0	18.3	0	0.0	0	0.0	0	0.0	0	0.0
12	74.8	64.6	0	21.6	0	0.4	0	0.4	0	0.4	0	0.4
13	78.3	66.7	0	25.7	0	1.7	0	1.7	0	1.7	0	1.7
14	81.2	68.4	0	29.3	0	6.9	0	6.9	0	6.9	0	6.9
15	83.0	70.0	0	32.0	0	17.1	0	17.2	0	17.2	0	17.2
16	83.7	70.5	0	33.8	0	19.5	0	19.5	0	19.5	0	19.5
17	83.4	70.5	0	33.4	0	20.1	0	20.1	0	20.1	0	20.1
18	82.8	70.9	0	31.3	0	20.1	0	20.1	0	20.1	0	20.1
19	81.6	72.7	0	28.3	0	18.9	0	18.9	0	18.9	0	18.9
20	80.1	74.7	0	25.9	0	18.1	0	18.1	0	18.1	0	18.1
21	78.3	74.1	0	23.3	0	16.3	0	16.3	0	16.3	0	16.3
22	76.3	72.4	0	19.4	0	13.9	0	13.9	0	13.9	0	13.9
23	74.1	70.7	0	16.3	0	10.3	0	10.3	0	10.3	0	10.3
24	71.8	68.9	0	13.4	0	6.7	0	6.7	0	6.7	0	6.7

October			----- Design -----		----- Weekday -----		----- Saturday-----		----- Sunday -----		----- Monday -----	
Hour	OADB	OAWB	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton	Htg Btuh	Clg Ton
1	52.2	50.5	0	0.0	-16,354	0.0	-113,833	0.0	-114,888	0.0	-114,907	0.0
2	50.1	48.6	0	0.0	-64,965	0.0	-140,958	0.0	-141,784	0.0	-141,799	0.0
3	48.4	46.9	0	0.0	-98,484	1.3	-162,087	0.0	-162,735	0.0	-162,747	0.0
4	47.1	45.8	0	0.0	-125,570	1.8	-178,017	0.0	-178,525	0.0	-178,534	0.0
5	46.3	44.8	-26,313	0.0	-148,337	1.6	-188,152	0.0	-188,552	0.0	-188,559	0.0
6	46.0	44.5	-36,515	0.0	-175,148	0.0	-193,123	0.0	-193,437	0.0	-193,442	0.0
7	46.8	45.3	-35,002	0.0	-170,899	0.0	-184,948	0.0	-185,195	0.0	-185,200	0.0
8	48.9	47.5	-19,468	0.0	-150,102	0.0	-161,098	0.0	-161,293	0.0	-161,296	0.0
9	52.2	49.9	0	0.0	-114,501	0.0	-123,115	0.0	-123,269	0.0	-123,272	0.0
10	56.2	52.5	0	0.0	-70,787	0.0	-77,538	0.0	-77,659	0.0	-77,662	0.0
11	60.4	54.4	0	0.0	-24,679	0.0	-29,972	0.0	-30,068	0.0	-30,069	0.0
12	64.4	56.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13	67.7	57.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14	69.8	58.2	0	1.8	0	0.0	0	0.0	0	0.0	0	0.0
15	70.6	58.1	0	3.0	0	0.0	0	0.0	0	0.0	0	0.0
16	70.3	57.5	0	6.9	0	0.0	0	0.0	0	0.0	0	0.0
17	69.5	57.3	0	8.8	0	0.0	0	0.0	0	0.0	0	0.0
18	68.2	57.7	0	12.9	0	0.0	0	0.0	0	0.0	0	0.0
19	66.5	60.6	0	9.6	0	0.0	0	0.0	0	0.0	0	0.0
20	64.4	60.8	0	6.2	0	0.0	0	0.0	0	0.0	0	0.0
21	62.1	59.4	0	2.7	0	0.0	0	0.0	0	0.0	0	0.0
22	59.6	57.3	0	0.0	-7,162	0.0	-9,373	0.0	-9,414	0.0	-9,415	0.0
23	57.0	55.1	0	0.0	-47,331	0.0	-49,056	0.0	-49,088	0.0	-49,088	0.0
24	54.5	52.7	0	0.0	-82,881	0.0	-84,229	0.0	-84,253	0.0	-84,254	0.0

BUILDING COOL-HEAT DEMAND - ALTERNATIVE 1
MULTI ZONE SYSTEM

November			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	52.0	49.2	-67,935	0.0		-40,933	0.0		-141,374	0.0		-142,277	0.0		-142,289	0.0	
2	49.4	47.3	-86,348	0.0		-90,292	0.9		-171,207	0.0		-171,914	0.0		-171,924	0.0	
3	47.2	45.3	-102,940	0.0		-126,906	1.8		-195,292	0.0		-195,847	0.0		-195,854	0.0	
4	45.3	43.4	-116,419	0.0		-164,694	1.3		-215,682	0.0		-216,119	0.0		-216,124	0.0	
5	43.9	42.2	-123,886	0.0		-201,618	0.0		-229,958	0.0		-230,301	0.0		-230,306	0.0	
6	43.0	41.4	-120,385	0.0		-216,547	0.0		-238,701	0.0		-238,971	0.0		-238,974	0.0	
7	42.7	41.2	-109,412	0.0		-223,771	0.0		-241,110	0.0		-241,323	0.0		-241,325	0.0	
8	43.5	42.0	-84,780	0.0		-216,934	0.0		-230,519	0.0		-230,686	0.0		-230,689	0.0	
9	45.9	44.0	-45,317	0.0		-190,004	0.0		-200,658	0.0		-200,790	0.0		-200,792	0.0	
10	49.4	46.6	0	0.0		-150,199	0.0		-158,562	0.0		-158,666	0.0		-158,668	0.0	
11	53.8	48.6	0	0.0		-100,039	0.0		-106,604	0.0		-106,685	0.0		-106,687	0.0	
12	58.4	50.6	0	0.0		-48,425	0.0		-53,578	0.0		-53,643	0.0		-53,644	0.0	
13	62.8	52.6	0	0.0		0	0.0		-4,652	0.0		-4,708	0.0		-4,709	0.0	
14	66.3	54.5	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
15	68.7	55.7	0	1.9		0	0.0		0	0.0		0	0.0		0	0.0	
16	69.5	56.1	0	1.8		0	0.0		0	0.0		0	0.0		0	0.0	
17	69.2	55.8	0	4.1		0	0.0		0	0.0		0	0.0		0	0.0	
18	68.3	57.0	0	3.2		0	0.0		0	0.0		0	0.0		0	0.0	
19	66.9	59.4	0	1.8		0	0.0		0	0.0		0	0.0		0	0.0	
20	65.0	59.4	0	0.8		0	0.0		0	0.0		0	0.0		0	0.0	
21	62.8	58.2	0	0.0		0	0.0		0	0.0		0	0.0		0	0.0	
22	60.2	56.1	0	0.0		-36,329	0.0		-38,221	0.0		-38,245	0.0		-38,245	0.0	
23	57.5	54.0	0	0.0		-73,446	0.0		-74,922	0.0		-74,941	0.0		-74,941	0.0	
24	54.7	51.7	0	0.0		-109,137	0.0		-110,291	0.0		-110,306	0.0		-110,306	0.0	

December			----- Design -----			----- Weekday -----			----- Saturday-----			----- Sunday -----			----- Monday -----		
Hour	OADB	OAWB	Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton		Htg Btuh	Clg Ton	
1	44.9	42.5	-145,123	0.0		-214,098	0.0		-232,731	0.0		-232,791	0.0		-232,791	0.0	
2	43.2	41.1	-156,584	0.0		-236,853	0.0		-251,385	0.0		-251,433	0.0		-251,433	0.0	
3	41.8	39.8	-166,860	0.0		-254,857	0.0		-266,205	0.0		-266,242	0.0		-266,242	0.0	
4	40.7	38.7	-175,784	0.0		-268,775	0.0		-277,650	0.0		-277,680	0.0		-277,680	0.0	
5	40.1	38.4	-181,317	0.0		-276,710	0.0		-283,660	0.0		-283,684	0.0		-283,684	0.0	
6	39.9	38.4	-177,612	0.0		-280,161	0.0		-285,609	0.0		-285,629	0.0		-285,629	0.0	
7	40.5	39.0	-168,818	0.0		-274,244	0.0		-278,519	0.0		-278,534	0.0		-278,534	0.0	
8	42.2	40.7	-150,628	0.0		-255,922	0.0		-259,279	0.0		-259,291	0.0		-259,291	0.0	
9	44.9	43.4	-122,096	0.0		-226,188	0.0		-228,827	0.0		-228,836	0.0		-228,836	0.0	
10	48.2	45.8	-87,144	0.0		-189,671	0.0		-191,746	0.0		-191,754	0.0		-191,754	0.0	
11	51.7	48.3	-44,177	0.0		-151,154	0.0		-152,786	0.0		-152,792	0.0		-152,792	0.0	
12	55.0	50.7	-4,012	0.0		-114,877	0.0		-116,161	0.0		-116,166	0.0		-116,166	0.0	
13	57.7	52.0	0	0.0		-85,863	0.0		-86,874	0.0		-86,878	0.0		-86,878	0.0	
14	59.5	52.6	0	0.0		-67,393	0.0		-68,189	0.0		-68,192	0.0		-68,192	0.0	
15	60.1	52.7	0	0.0		-62,391	0.0		-63,017	0.0		-63,020	0.0		-63,020	0.0	
16	59.9	52.6	0	0.0		-65,014	0.0		-65,508	0.0		-65,510	0.0		-65,510	0.0	
17	59.2	52.1	0	0.0		-71,930	0.0		-72,319	0.0		-72,321	0.0		-72,321	0.0	
18	58.2	51.8	0	0.0		-82,136	0.0		-82,444	0.0		-82,445	0.0		-82,445	0.0	
19	56.8	52.2	0	0.0		-97,913	0.0		-98,156	0.0		-98,157	0.0		-98,157	0.0	
20	55.0	51.4	0	0.0		-118,710	0.0		-118,902	0.0		-118,903	0.0		-118,903	0.0	
21	53.1	50.1	-29,563	0.0		-140,358	0.0		-140,511	0.0		-140,512	0.0		-140,512	0.0	
22	51.0	48.1	-60,029	0.0		-164,465	0.0		-164,586	0.0		-164,586	0.0		-164,586	0.0	
23	48.9	46.2	-84,639	0.0		-188,304	0.0		-188,400	0.0		-188,400	0.0		-188,400	0.0	
24	46.9	44.1	-103,873	0.0		-210,499	0.0		-210,575	0.0		-210,576	0.0		-210,576	0.0	

01 Card - Job Information

Project: CHILD CARE HOSPITAL
 Location: FORT GORDON, GEORGIA
 Client: U. S. ARMY CORP OF ENGINEERS
 Program User: BON
 Comments: BUILDING 33800 (1 BLDG)

-----CARD 08-- Climatic Information-----

	Summer	Winter	Summer	Summer	Winter		Summer	Winter
Weather	Clearness	Clearness	Design	Design	Design	Building	Ground	Ground
Code	Number	Number	Dry Bulb	Wet Bulb	Dry Bulb	Orientation	Reflect	Reflect
AUGUSTA								

-----CARD 09-- Load Simulation Periods-----

1st Month	Last Month	Peak	1st Month	Last Month	1st Month	Last Month
Cooling	Cooling	Cooling	Summer	Summer	Daylight	Daylight
Simulation	Simulation	Load Hr	Period	Period	Savings	Savings
APR	OCT					

-----CARD 10 -- Load Simulation Parameters-----

Cooling	Heating		Airflow	Airflow	Room	Put Wall
Load	Load	Ventilation	Input	Output	Circulation	RA Load
Method	Method	Method	Units	Units	Rate	to Room
CLTD-CLF	TETD-TA1	OAHIGH	ACTUAL	ACTUAL	MED-RCR	NO

----- Load Section Alternative #1 -----

---- Load Alternative ----

Number	Description
1	CLINIC

-----CARD 20-- General Room Parameters-----

Room	Zone					Acoustic	Floor to	Duplicate	Duplicate	Perimeter
Number	Reference	Room	Floor	Floor	Const	Plenum	Floor	Floors	Rooms per	Depth
	Number	Descrip	Length	Width	Type	Height	Height	Multiplier	Zone	
1	1	BLOCK	707.5	10	3	0	9.5			

-----CARD 20-- General Room Parameters -----

Room Number	Zone Reference Number	Room Descrip	Floor Length	Floor Width	Const Type	Plenum Height	Acoustic Ceiling Resistance	Floor to Floor Height	Duplicate Floors Multiplier	Duplicate Rooms per Zone	Perimeter Depth
2	1	BLOCK	735	10	3	0		9.5	3		

-----CARD 21-- Thermostat Parameters -----

Room Number	Cooling Room Design DB	Room Design RH	Cooling T'stat Driftpoint	Cooling T'stat Schedule	Heating Room Design DB	Heating T'stat Driftpoint	Heating T'stat Schedule	T'stat Location Flag	Mass / No. Hrs Average	Carpet On Floor
1		50		CLGCONST			HTGCONST		LIGHT30	NO
2		50		CLGCONST			HTGCONST		LIGHT30	NO

-----CARD 22-- Roof Parameters -----

Room Number	Roof Number	Roof Equal to Floor?	Roof Length	Roof Width	Roof U-Value	Const Type	Roof Direction	Roof Tilt	Roof Alpha
1	1	YES				4			
2	1	YES				4			

-----CARD 24-- Wall Parameters -----

Room Number	Wall Number	Wall Length	Wall Height	Wall U-Value	Wall Constuc Type	Wall Direction	Wall Tilt	Wall Alpha	Ground Reflectance Multiplier
1	1	100	10		196	0			
1	2	39.25	10		196	90			
1	3	69.25	10		196	180			
1	4	50	10		196	90			
1	5	50.8	10		196	180			
1	6	132.8	10		196	270			
2	1	130	10		196	0			
2	2	40.75	10		196	90			
2	3	96.75	10		196	180			
2	4	61.25	10		196	90			
2	5	33.8	10		196	180			
2	6	63	10		196	270			

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar to Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	1	3.5	4.5	11	1.03	.83					
1	3	3.5	4.5	3	1.03	.83					

-----CARD 25-- Wall/Glass Parameters -----

Room Number	Wall Number	Glass Length	Glass Width	Pct Glass or No. of Windows	Glass U-Value	Shading Coefficient	External Shading Type	Internal Shading Type	Percent Solar Ret. Air	Visible Transmittance	Inside Visible Reflectance
1	4	3	7	9	1.03	.83					
1	5	3.5	4.5	3	1.03	.83					
1	6	3	7	14	1.03	.83					
2	1	3	5	13	1.03	.83					
2	3	3	5	4	1.03	.83					
2	4	3	5	4	1.03	.83					
2	6	3	5	5	1.03	.83					

-----CARD 26-- Schedules -----

Room Number	People	Lights	Ventilation	Infiltration	Reheat Minimum	Cooling Fans	Heating Fan	Auxiliary Fan	Room Exhaust	Daylighting Controls
1	FGHEAT	FGHEAT	YES	YES						
2	FGHEAT	FGHEAT	YES	YES						

-----CARD 27-- People and Lights -----

Room Number	People Value	People Units	People Sensible	People Latent	Lighting Value	Lighting Units	Lighting Fixture Type	Ballast Factor	Percent Lights to Ret. Air	--- Daylighting --- Reference Point 1	Reference Point 2
1	101	PEOPLE	255	325	2	WATT-SF	ASHRAE2				
2	35	PEOPLE	255	325	2	WATT-SF	ASHRAE2				

-----CARD 28--- Miscellaneous Equipment -----

Room Number	Misc Equipment Number	Equipment Descrip	Energy Consump Value	Energy Consump Units	Schedule Code	Energy Meter Code	Percent of Load Sensible	Percent Misc. Load to Room	Percent Misc. Sens to Ret. Air	Radiant Fraction	Optional Air Path
1	1	MISC	23	KW	FGHEAT						
2	1	MISC.	64	KW	FGHEAT						

-----CARD 29--- Room Airflows -----

-----Ventilation-----					-----Infiltration-----				--Reheat Minimum--	
Room Number	-----Cooling----- Value	Units	-----Heating----- Value	Units	-----Cooling----- Value	Units	-----Heating----- Value	Units	Value	Units
1	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		
2	15	CFM-P	15	CFM-P	.08	CFM-SF	.1	CFM-SF		

```

-----CARD 30- Fan Airflows -----
-----Main-----
Room  Number  Value  Units  Value  Units  Value  Units  Value  Units  Value  Units
1      1      CFM-SF  1      CFM-SF
2      1      CFM-SF  1      CFM-SF
-----Auxiliary-----

```

```

----- System Section Alternative #1 -----

```

```

-----CARD 39-- System Alternative -----
Number  Description
1      MULTI ZONE SYSTEM

```

```

-----CARD 40--- System Type -----
-----OPTIONAL VENTILATION SYSTEM-----
System  Ventil  Fan
Set      System  Deck  Cooling Heating Cooling Heating Static
Number  Type  Location SADBvh SADBvh Schedule Schedule Pressure
1      MZ

```

```

-----CARD 41-- Zone Assignment -----
System
Set      Ref #1      Ref #2      Ref #3      Ref #4      Ref #5      Ref #6
Number  Begin  End  Begin  End  Begin  End  Begin  End  Begin  End
1      1      1

```

```

-----CARD 42--- Fan SP and Duct Parameters-----
System  Cool  Heat  Return  Mn Exh  Aux  Rm Exh  Cool  Return  Supply  Supply  Return
Set      Fan  Fan  Fan  Fan  Fan  Fan  Fan Mtr  Fan Mtr  Duct  Duct  Air
Number  SP  SP  SP  SP  SP  SP  Loc  Loc  Ht Gn  Loc  Path
1

```

Utility Description Reference Table

Schedules:

CLGCONST SAMPLE COOLING TSTAT SCHEDULE
FGHEAT SCHD FOR HEAT LOAD CALCS
HTGCONST SAMPLE HEATING TSTAT SCHEDULE
YES AVAILABLE (100%)

System:

MZ MULTIZONE

Schedule Name: CLGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Temperature
0	75
24	

Schedule Name: FGHEAT
Project: SCHO FOR HEAT LOAD CALCS
Location: AUGUSTA, GEORGIA
Client: CORP OF ENGINEERS
Program User: BON
Comments:

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Starting Month: HTG Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	0
24	

Schedule Name: HTGCONST
Project: SAMPLE HEATING TSTAT SCHEDULE
Location: SAMPLE
Client:
Program User:
Comments: HEATING THERMOSTAT

Starting Month: JAN Ending Month: DEC
Starting Day Type: DSGN Ending Day Type: SUN

Hour Temperature

0 72
24

Schedule Name: YES
Project: AVAILABLE (100)
Location:
Client:
Program User:
Comments:

Starting Month: JAN Ending Month: HTG
Starting Day Type: DSGN Ending Day Type: SUN

Hour	Util Percent
0	100
24	